XVII. Kongres Društva nastavnika opće/obiteljske medicine (DNOOM)

Knjiga sažetaka / Book of Abstracts

Biblioteka:
Knjige sažetaka Kongresa DNOOM

Nakladnik:
Redak

Urednice:
doc. dr. sc. Jasna Vučak
Roberta Marković, dr. med.

Recenzenti:
prof. dr. sc. Milca Katić
prof. dr. sc. Ines Diminić-Lisica
prof. dr. sc. Rudika Gmajnić
doc. dr. sc. Nataša Mrduljaš-Đujić
doc. dr. sc. Jasna Vučak
doc. dr. sc. Ksenija Kranjčević
doc. dr. sc. Valerija Bralić-Lang
doc. dr. sc. Nina Bašić-Marković
doc. dr. sc. Branislava Popović
prof. dr. sc. Sanda Pribić
doc. dr. sc. Leonardo Bukmir
doc. dr. sc. Tamara Sinožić
doc. dr. sc. Aleksandar Ljubotina
doc. dr. sc. Nives Radošević Quadranti
dr. sc. Juraj Jug
doc. dr. sc. Tina Zavidić

Bilješka:
Priopćenja i povezani tekstovi isključiva su odgovornost autora

Note:
The communications and related texts are the sole responsibility of the authors

Grafička priprema:
Redak

ISSN: 2623-8551

www.webknjizara.hr

XVII. Kongres Društva nastavnika opće/obiteljske medicine (DNOOM)

Knjiga sažetaka

Book of Abstracts

2026.

Znanstveni odbor (abecednim redom)

doc. dr. sc. prim. Bralić Lang, Valerija, doc. dr. sc. Bukmir, Leonardo, prof. dr. sc. Diminić Lisica, Ines, prof. dr. sc. prim. Gmajnić, Rudika, prof. dr. sc. Katić, Milica, doc. dr. sc. Kranjčević, Ksenija, doc. dr. sc. Bašić-Marković, Nina, doc. dr. sc. Mrduljaš-Đujić, Nataša, prof. dr. sc. Pribić, Sanda, Soldo, Dragan, dr. med., doc. dr. sc. Stojanović Špehar, Stanislava, doc. dr. sc. Vučak, Jasna, prof. dr. sc. Tiljak, Hrvoje, doc. dr. sc. Sinožić, Tamara, doc. dr. sc. Radošević Quadranti, Nives, dr. sc. Jug, Juraj, doc. dr. sc. Matić Ličanin, Matea, doc. dr. sc. Ljubotina, Aleksandar, izv. prof. dr. sc. Popović, Branislava, dr. sc. Zavidić, Tina

Počasni znanstveni odbor kongresa (abecednim redom)

prof. dr. sc. Batić Mujanović, Olivera /Bosna i Hercegovina/, prof. dr. sc. Busneag, Carmen /Rumunjska/, prof. dr. sc. Cojić, Milena /Crna Gora/, doc. dr. sc. Ivetić, Vojislav, prof. dr. sc. Jatić, Zaim /Bosna i Hercegovina/, prof. dr. sc. Kirov, Ljubomir /Bugarska/, dr. sc. Kuprešak, Draško /Bosna i Hercegovina/, prof. dr. sc. Mazicioglu, Mumtaz /Turska/, prof. dr. sc. Rotar Pavlič, Danica /Slovenija/, prof. dr. sc. Stavrić, Katerina /Sjeverna Makedonija/, prof. dr. sc. Selmanović, Senada /Bosna i Hercegovina/, izv. prof. dr. sc. Aleksander Stepanovič /Slovenija/, prof. dr. sc. Švab, Igor /Slovenija/, prim. Šukriev, Ljubin /Sjeverna Makedonija/, prof. dr. sc. Zalihić, Amra /Bosna i Hercegovina/, prof. dr. sc. Todorović, Nevena / Bosna i Hercegovina/

1. KEY NOTE SPEAKER

Extended Abstract
Key note speaker

Etički temelj obiteljske medicine: od proizvodnje usluga prema skrbi za osobu

Igor Švab[1]

1. Univerza v Ljubljani, Medicinska fakulteta, Katedra za družinsko medicino

Ključne riječi: obiteljska medicina, etika, temeljne vrijednosti, skrb za osobu

Adresa za dopisivanje: Poljanski nasip 58, 1000 Ljubljana, Slovenija
E adresa: igor.svab@mf.uni-lj.si
ORCID: 0000-0003-1303-4974

U suvremenoj medicini sve se češće susrećemo s pomakom od medicine kao profesionalne i etičke prakse prema medicini shvaćenoj prvenstveno kao proizvodnji zdravstvenih usluga. U takvom okviru pacijent postaje korisnik, a odnos između liječnika i pacijenta reducira se na organizacijski ili financijski trošak. Ovo predavanje polazi od teze da je temeljna kriza medicine prije svega vrijednosna, a ne isključivo organizacijska ili ekonomska.

Obiteljska medicina se tradicionalno temelji na skrbi za osobu, a ne samo na primjeni znanstveno utemeljenih intervencija. Na temelju rada unutar WONCA-ine skupine za temeljne vrijednosti obiteljske medicine (core values), izlaganje razmatra ključne vrijednosti struke, kao što su usmjerenost na osobu, kontinuitet skrbi, profesionalna odgovornost, pravednost i integritet. Ove vrijednosti ne predstavljaju dodatak kliničkom radu, već njegovu etičku i profesionalnu jezgru. Posebna se pažnja posvećuje razlikovanju između smjernica, koje proizlaze iz populacijskih prosjeka, i kliničkog odlučivanja koje se uvijek odnosi na konkretnog čovjeka u njegovom životnom kontekstu. Slično tome, naglašava se napetost između zahtjeva za produktivnošću i potrebe za stvarnom prisutnošću liječnika, bez koje nema odnosa ni autentične skrbi.

U drugom dijelu predavanja razmatra se pitanje poučavanja etike u obiteljskoj medicini. Ističe se da se etička kompetencija ne može učinkovito razvijati isključivo tradicionalnim obrazovnim metodama, poput predavanja ili ispita. Etika se u najvećoj mjeri prenosi kroz profesionalni uzor, mentorstvo i svakodnevne kliničke odluke. Stoga se zaključuje da izbor učitelja obiteljske medicine zahtijeva kriterije koji nadilaze isključivo znanstvenu produktivnost te uključuju osobni i profesionalni integritet. Jasna etička orijentacija nužna je kako bi obiteljska medicina očuvala svoj identitet i odgovorila na suvremene profesionalne izazove.

Extended Abstract
Key note speaker

The Ethical Foundation of Family Medicine: From the Production of Services to Care for the Person

Igor Švab[1]

1. University of Ljubljana, Faculty of Medicine, Department of Family Medicine

Keywords: family medicine, ethics, core values, person-centred care

Correspondence address: Poljanski nasip 58, 10000 Ljubljana, Slovenia
E-mail: igor.svab@mf.uni-lj.si
ORCID: 0000-0003-1303-4974

In contemporary medicine, there is an increasing shift from medicine as a professional and ethical practice toward medicine understood primarily as the production of healthcare services. Within such a framework, the patient is increasingly perceived as a service user, while the relationship between physician and patient is reduced to an organisational or financial cost. This lecture is based on the premise that the current crisis of medicine is fundamentally a crisis of values, rather than merely an organisational or economic one.

Family medicine has traditionally been grounded in care for the person, not solely in the application of scientifically validated interventions. Drawing on work within the WONCA Working Party on Core Values of Family Medicine, the lecture explores the key values of the discipline, including person-centred care, continuity of care, professional responsibility, justice, and integrity. These values do not constitute an optional addition to clinical work but represent its ethical and professional core. Particular attention is given to the distinction between clinical guidelines, which are derived from population averages, and clinical decision-making, which must always address the individual person within their unique life context. Similarly, the tension between demands for productivity and the need for genuine physician presence is highlighted, as authentic care cannot exist without a meaningful relationship.

The second part of the lecture addresses the teaching of ethics in family medicine. It is argued that ethical competence cannot be effectively developed through traditional educational methods alone, such as lectures or examinations. Ethical values are primarily transmitted through professional role modelling, mentorship, and everyday clinical decision-making. Consequently, the selection of teachers in family medicine requires criteria that go beyond scientific productivity and include personal and professional integrity. A clearly articulated ethical orientation is essential if family medicine is to preserve its identity and respond adequately to contemporary professional challenges.

Extended Abstract
Key note speaker

Enhancing the Recognition and Value of Family Medicine in European Healthcare Systems

Tiago Villanueva Gutierrez Arruda Marques[1,2]

1. Portuguese National Health Service
2. European Union of General Practitioners

E adresa: tiago.villanueva@gmail.com

Family Medicine plays a foundational role in safeguarding the accessibility, continuity, and quality of healthcare across Europe, yet its full value remains insufficiently recognized at both national and EU levels. This presentation explores the structural, regulatory, and cultural factors that continue to limit the visibility, status, and policy prioritization of Family Medicine despite its proven contributions to population health and health-system sustainability.

Drawing on comparative workforce data and current trends across Member States, the session highlights persistent challenges faced by family physicians: rising patient loads, administrative burden, shorter consultations, and increasing difficulty attracting new doctors to the specialty. These pressures underscore the urgent need to strengthen the profession's profile, improve working conditions, and modernize career pathways to make Family Medicine an appealing long-term professional choice.

A central theme is the gap in EU-level recognition, where Family Medicine is acknowledged nationally in most countries but still not formally included as a specialty under the European Union's system for the automatic recognition of professional qualifications. This mismatch affects professional mobility, training harmonization, and the broader perception of the discipline's expertise. The presentation outlines the European legislative framework, explains the steps required to achieve inclusion in Annex V of Directive 2005/36/EC, and clarifies the role of Member States in driving this process.

Finally, the talk proposes strategic, forward-looking policy recommendations: strengthening data on the primary care workforce, promoting longer consultations and smaller patient lists, expanding training exposure for medical students, and adopting positive workforce policies that affirm the centrality of Family Medicine. Through continued advocacy and collaboration, European institutions and national governments can elevate Family Medicine to its rightful place as a cornerstone of resilient, patient-centred healthcare systems.

2. GLAVNI PROGRAM

Fukcionalna dijagnostika opstruktivnih bolesti pluća

Jasna Vučak[1,2], Iris Đipalo Juretić[3]

1. Društvo nastavnika opće/obiteljske medicine
2. Medicinski fakultet Sveučilišta u Rijeci, Katedra za obiteljsku medicinu
3. MedproClinic, Amal, Švedska

Ključne riječi: funkcionalna dijagnostika, opstruktivne bolesti pluća, procjena plućne funkcije, liječnici opće/obiteljske medicine
Adresa za dopisivanje: Braće Branchetta 20, 51000 Rijeka
E adresa: jasna.vucak@yahoo.com
ORCID: 0000-0003-4328-531X

Uvod s ciljem. Visoka prevalencija i karakteristike opstruktivnih bolesti pluća značajno pridonose morbiditetu, mortalitetu i troškovima zdravstvene zaštite. Precizna funkcionalna procjena dišnog sustava je ključna za ranu dijagnozu, stratifikaciju rizika i praćenje akutnih i kroničnih oboljenja respiratornog sustava. Cilj rada je sustavno prikazati modalitete funkcionalne dijagnostike opstruktivnih plućnih bolesti važnih za kliničku praksu liječnika obiteljske medicine (LOM).

Metode. Pretraživane su baze podataka GoogleScolar i UpToDate prema ključnim riječima opstruktivne bolesti pluća (engl. obstructive pulmonary diseases), funkcionalna dijagnostika bolesti pluća (engl. functional diagnostics of pulmonary diseases) , liječnici opće/obiteljske medicine (engl. general practitioners/family physicians)u posljednjih pet godina. Od prvotno pronađenih 78 cjelovitih članaka u analizu je uvršteno njih 28. Korišten je i ChatGPT 5.0 (OpenAI) kao potpora u oblikovanju strukture teksta, prijedloga formulacija te provjeri jezične jasnoće. Dobiveni sadržaji nisu korišteni nekritički, već su naknadno provjereni, uređeni i usklađeni s relevantnom znanstvenom literaturom.

Rasprava. Adekvatna funkcionalna dijagnostika poboljšava sposobnost identifikacije bolesti, pomaže u optimizaciji terapijskih pristupa i povećava kvalitetu života pacijenata, uz smanjenje zdravstvenih troškova. Od osnovnih dijagnostičkih metoda procjene oboljenja pluća koje su neophodne u radu LOM-a, izdvajamo: spirometriju (uključujući bronhodilatacijske testove), mjerenje vršnog protoka (PEF), mjerenje difuzijskog kapaciteta pluća za ugljični monoksid (DLCO), nespecifične bronhoprovokacijske testove i mjerenje dušičnog oksida u izdahnutom zraku (FeNO). Spirometrija je najčešće korišteni funkcionalni test koji pruža ključne parametre kao što su forsirani ekspiracijski volumen u jednoj sekundi (FEV_1) i forsirani vitalni kapacitet (FVC), koji su temeljni za dijagnozu obstruktivnih i restriktivnih bolesti pluća. Osnovna karakteristika opstruktivnih bolesti pluća je očuvanje vitalnog kapaciteta (VC) uz smanjenje forsiranog ekspiracijskog volumena u jednoj sekundi (FEV_1), iz čega se izračunava Tiffneauov indeks (Tx) (omjer između FEV_1 i FVC, izražen kao postotak) i u opstruktivnim bolestima pluća je jednak ili manji od 70%. Nasuprot tome, kod restriktivnih poremećaja dolazi do smanjenja oba parametra, prvenstveno VC, što rezultira Tx vrednostima većim od 70%. Spirometrija s bronhodilatacijskim testovima pruža informacije o reverzibilnosti bronhoopstrukcije. Povećanje FEV_1 od 200 ml i 12% od bazalnih vrijednosti ukazuje na reverzibilnost bronhoopstrukcije. Dok se u dijagnostici KOPB-a smatra zlatnim standardom, u kontekstu astme služi kao pomoćna dijagnostička metoda. Kapacitet difuzije za ugljični monoksid (DLCO) dodatno procjenjuje prijenos plinova između alveola i kapilara, što je ključno za identifikaciju funkcionalnih poremećaja pluća uzrokovanih oštećenjem alveola. PEF predstavlja maksimalnu brzinu izdisaja zraka iz pluća nakon potpune inhalacije, mjerenu u litrama u minuti (L/min) pomoću vršnog protok metra. Obično se koristi u samoprocjeni kontrole astme i dio je akcijskog plana u terapiji i kontroli astme. FeNO mjeri razinu dušičnog oksida (NO) u izdahnutom zraku. Povišene razine NO mogu ukazivati na upalu dišnih puteva, što je često povezano s astmom.

Zaključak. Navedeni osnovni funkcionalni testovi omogućuju sveobuhvatnu procjenu stanja pluća i dišnog sustava. Poznavanje pravilnih tehnika izvođenja, tumačenja dobivenih rezultata u kliničkom kontekstu te primjena odgovarajuće terapije su od velikog značaja u svakodnevnom radu LOM.

LITERATURA:

1. Kaminsky DA. Overview of pulmonary function testing in adults. In: McCormack MC, Dieffenbach P, eds. UpToDate. Waltham (MA): UpToDate Inc.; 2024 (pristupljeno 22.1.2026.). Dostupno s :https://www.uptodate.com
2. Ponce MC, Sankari A, Sharma S. Pulmonary Function Tests NCBI Bookshelf. A service of the National Library of Medicine, National Institutes of Health (2023.) Dostupno s :
3. https://www.ncbi.nlm.nih.gov/books/NBK482339/?report=printable (pristupljeno 4.1.2026)
4. Smith BR, Lee K. The role of pulmonary function tests in the diagnosis and management of respiratory diseases. Am J Respir Crit Care Med. 2021;203(5):603-12.
5. Brown MA, Thompson G. Functional assessment of the respiratory system: current trends in pulmonary diagnostics. Chest. 2020;158(4):1550-64. doi:
6. Gonzalez A, Patel M. Innovations in spirometry: enhancing functional diagnostic tools for respiratory disease management. Respir Care. 2023;68(1):89-98

Functional Diagnostics of Obstructive Pulmonary Diseases

Jasna Vučak[1,2], Iris Đipalo Juretić[3]

1. Society of Teachers of General/Family Medicine
2. Faculty of Medicine, University of Rijeka, Department of Family Medicine
3. MedproClinic, Amal, Sweden

Keywords: functional diagnostics, obstructive pulmonary diseases, pulmonary function assessment, general practitioners/family physicians
Correspondence address: Braće Branchetta 20, 51 000 Rijeka
E-mail: jasna.vucak@yahoo.com
ORCID: 0000-0003-4328-531X

Introduction with Aim. The high prevalence and characteristics of obstructive pulmonary diseases significantly contribute to morbidity, mortality, and healthcare costs. Accurate functional assessment of the respiratory system is essential for early diagnosis, risk stratification, and monitoring of acute and chronic respiratory diseases. The aim of this paper is to systematically present the modalities of functional diagnostics of obstructive pulmonary diseases relevant to clinical practice in general/family medicine.

Methods. The databases Google Scholar and UpToDate were searched using the keywords obstructive pulmonary diseases, functional diagnostics of pulmonary diseases, and general practitioners/family physicians over the past five years. Of the initially identified 78 full-text articles, 28 were included in the analysis. ChatGPT 5.0 (OpenAI) was also used as support in structuring the text, suggesting formulations, and checking linguistic clarity. The generated content was not used uncritically but was subsequently reviewed, edited, and aligned with relevant scientific literature.

Discussion. Adequate functional diagnostics improves disease identification, helps optimize therapeutic approaches, enhances patients' quality of life, and reduces healthcare costs. Among the basic diagnostic methods for lung disease assessment essential in general/family medicine practice are: spirometry (including bronchodilator testing), peak expiratory flow (PEF) measurement, diffusing capacity of the lung for carbon monoxide (DLCO), nonspecific bronchoprovocation tests, and measurement of fractional exhaled nitric oxide (FeNO). Spirometry is the most commonly used functional test and provides key parameters such as forced expiratory volume in one second (FEV_1) and forced vital capacity (FVC), which are fundamental for diagnosing obstructive and restrictive lung diseases. The basic characteristic of obstructive lung diseases is preservation of vital capacity (VC) with a reduced forced expiratory volume in one second (FEV_1), from which the Tiffeneau index (Tx) is calculated (the ratio between FEV_1 and FVC expressed as a percentage); in obstructive lung diseases, it is equal to or less than 70%. In contrast, restrictive disorders are characterized by a reduction in both parameters, primarily VC, resulting in Tx values greater than 70%. Spirometry with bronchodilator testing provides information on the reversibility of bronchial obstruction. An increase in FEV_1 of 200 mL and 12% from baseline values indicates reversibility of bronchial obstruction. While it is considered the gold standard in the diagnosis of COPD, in the context of asthma it serves as an adjunct diagnostic method. Diffusing capacity for carbon monoxide (DLCO) further assesses gas transfer between alveoli and capillaries, which is crucial for identifying functional lung impairment caused by alveolar damage. PEF represents the maximum speed of air exhalation from the lungs after full inhalation, measured in liters per minute (L/min) using a peak flow meter. It is commonly used in self-assessment of asthma control and forms part of the action plan in asthma management. FeNO measures the level of nitric oxide (NO) in exhaled air. Elevated NO levels may indicate airway inflammation, which is often associated with asthma.

Conclusion. The listed basic functional tests enable comprehensive assessment of lung and respiratory system status. Knowledge of proper performance techniques, interpretation of results within the clinical context, and application of appropriate therapy are of great importance in everyday general/family medicine practice.

REFERENCES:

1. Kaminsky DA. Overview of pulmonary function testing in adults. In: McCormack MC, Dieffenbach P, eds. UpToDate. Waltham (MA): UpToDate Inc.; 2024 (pristupljeno 22.1.2026.). Dostupno s :https://www.uptodate.com
2. Ponce MC, Sankari A, Sharma S. Pulmonary Function Tests NCBI Bookshelf. A service of the National Library of Medicine, National Institutes of Health (2023.) Dostupno s :
3. https://www.ncbi.nlm.nih.gov/books/NBK482339/?report=printable (pristupljeno 4.1.2026)
4. Smith BR, Lee K. The role of pulmonary function tests in the diagnosis and management of respiratory diseases. Am J Respir Crit Care Med. 2021;203(5):603-12.
5. Brown MA, Thompson G. Functional assessment of the respiratory system: current trends in pulmonary diagnostics. Chest. 2020;158(4):1550-64. doi:
6. Gonzalez A, Patel M. Innovations in spirometry: enhancing functional diagnostic tools for respiratory disease management. Respir Care. 2023;68(1):89-98

Diagnosis and treatment of patients with chronic obstructive pulmonary disease

Katerina Kovachevikj[1], Marta Tundzeva[1], Sashka Janevska[1], Šukiev Ljubin [1], Katarina Stavrikj[1]

1. Center for Family Medicine, Faculty of Medicine, Skopje, RS Macedonia

Keywords: chronic obstructive pulmonary disease, diagnosis, management, treatment, family doctor
Correspondence address: dr. sc. Katerina Kovachevikj, Orce Nikolov 186 2/32, 1000 Skoplje, Republic of Macedonia
E-mail: vitakaterina@gmail.com
ORCID: Katerina Kovachevikj: 0000-0002-1260-6419
Marta Tundzeva: 0000-0003-2754-2371
Sashka Janevska: 0000-0003-1247-3297
Ljubin Shukriev: 0000-0003-4625-8149
Katarina Stavrikj: 0000-0002-8319-4554

Introduction with aim. Chronic obstructive pulmonary disease (COPD) is a global public health problem and one of the leading causes of morbidity, disability and mortality in recent decades worldwide. The global prevalence of COPD is estimated at 10,3%, with a projected increase of 23% by 2050. The disease is often not diagnosed in a timely manner or is misdiagnosed, patients are treated inadequately or remain without medical treatment, which leads to premature mortality or fatal health complications. The aim of the paper is to present the role of the family doctor (FD) in the early recognition, diagnosis, treatment and management of acute exacerbations of chronic obstructive pulmonary disease (AECOPD).

Discussion. Chronic obstructive pulmonary disease is a preventable and treatable disease. Family doctors are ideally positioned to identify individuals at risk of COPD as they are the first point of contact with the patient. COPD should be suspected in any patient aged ≥ 40 years with dyspnea, chronic cough and/or expectoration, and a history of frequent lower respiratory tract infections and/or a history of exposure to risk factors such as tobacco, cooking fuels, or occupational hazards. These individuals should undergo spirometry or the patients should be referred for testing. Confirmation of persistent airflow obstruction is a post-bronchodilator ratio of forced expiratory volume in one second to forced vital capacity (FEV1/FVC) < 70%. An initial assessment of disease severity is based on symptoms and frequency and severity of AECOPD. The GOLD guidelines (Global Initiative for Chronic Obstructive Pulmonary Disease) recommend stratification into 3 groups, A, B and E, and 4 subgroups 1, 2, 3 or 4 based on FEV1%. Before determining treatment, an assessment of the following 5 fundamental aspects is required: the degree of airflow obstruction, the nature and intensity of symptoms, the number and severity of AECOPD in the past year, the peripheral blood eosinophil counts, the presence of comorbidities. To assess the severity of symptoms, we use the Modified Medical Research Council (mMRC) dyspnea scale and the COPD Assessment Test (CAT). Treatment is multimodal and includes education, smoking cessation, pharmacotherapy, vaccination, pulmonary rehabilitation and oxygen therapy. Treatment should be initiated with a long-acting bronchodilator, either as monotherapy or dual therapy. Inhaled corticosteroids are recommended in special cases of COPD. The treatment plan also includes the menagement of comorbidities. The patient is monitored in the family doctor's office. Inhalation technique, degree of dyspnea, severity of symptoms, effect of pharmacological therapy are checked, and education is provided, The therapy it then adjusted or changed, including escalation or de-escalation based on symptoms and predisposition to AEKOPB. In AEKOPB, the severity of the exacerbation is assessed - mild, moderate or severe, and appropriate treatment is applied or referral to a higher level in case of inadequate response to therapy. Severe AEKOPB requires immediate referral. Frequent AEKOPB is a direct predictor of disease progression. If the disease is not well controlled and the patient expiriances frequent symptoms, the patient is referred to a pulmonologist. For controlled COPD, follow up spirometry is recommended once a year.

Conclusion. Family doctor have an indispensable role in early recognition, diagnosis and the timely initiation of treatment. A structured, individualized approach improves clinical outcomes, including improvement in symptoms, lung function and quality of life.

REFERENCES:

1. Boers E, Barrett M, Su JG, Benjafield AV, Sinha S, Kaye L, Zar HJ, Vuong V, Tellez D, Gondalia R, Rice MB, Nunez CM, Wedzicha JA, Malhotra A. Global Burden of Chronic Obstructive Pulmonary Disease Through 2050. JAMA Netw Open. 2023 Dec 1;6(12):e2346598. doi: 10.1001/jamanetworkopen.2023.46598. PMID: 38060225; PMCID: PMC10704283
2. Global Strategy for the diagnosis, management and prevention of COPD, Global Initiative for Chronic Obstructive Lung Disease (GOLD) 2025. http://www.goldcopd.
3. Adeloye D, Song P, Zhu Y, Campbell H, Sheikh A, Rudan I; NIHR RESPIRE Global Respiratory Health Unit. Global, regional, and national prevalence of, and risk factors for, chronic obstructive pulmonary disease (COPD) in 2019: a systematic review and modelling analysis. Lancet Respir Med. 2022; 10(5):44758.
4. Vukić Dugac A, Basioli Kasap E, Gomerčić Palčić M, Ljubičić Đ, Mladinov S, Popović-Grle S et al. Guidelines for the treatment of chronic obstructive pulmonary disease of the Croatian Pulmonary Society of the Croatian Medical Association and the Croatian Thoracic Society. Liječnički vjesnik [Internet]. 2025 [accessed 19.01.2026.];147(5-6):163-186. https://doi.org/10.26800/LV-147-5-6-1

Astma – pristup dijagnostici i liječenju u ordinaciji obiteljske medicine

Roberta Marković Štimac[1,2], Vojislav Ivetić[3,4]

1. Ustanova za primarnu zdravstvenu zaštitu Srdoči, Rijeka
2. Katedra za obiteljsku medicinu, Medicinski fakultet, Sveučilište u Rijeci
3. Katedra za obiteljsku medicinu, Medicinski fakultet, Sveučilište u Mariboru
4. Sava Med d.o.o., Cesta k Dravi 8, 2000 Maribor, Slovenija

Ključne riječi: astma, GINA 2025, liječnik obiteljske medicine
Adresa za dopisivanje: Roberta Marković Štimac, Srdoči 65D, 51 000 Rijeka
E-mail: roberta.markovic@uniri.hr
ORCID: Roberta Marković Štimac: 0000-0002-0232-0249

Uvod s ciljem. Astma je kronična upalna bolest dišnih putova karakterizirana varijabilnom i reverzibilnom opstrukcijom dišnih puteva, čestim simptomima poput piskanja, kašlja, osjećaja stezanja u prsima i dispneje te rizikom od ozbiljnih egzacerbacija. Važno ju je rano prepoznati i dijagnosticirati kako bi se smanjio rizik komplikacija, poboljšala kontrola bolesti i kvaliteta života bolesnika. Prema najnovijim smjernicama Globalne inicijative za astmu (GINA 2025), dijagnoza se temelji na karakterističnoj kliničkoj slici uz objektivne nalaze koji potvrđuju varijabilnu opstrukciju protoka zraka i/ili upalu dišnih putova. NICE smjernice za 2024./2025. dodatno naglašavaju važnost standardiziranog pristupa dijagnostici i liječenju astme u bolesnika svih dobnih skupina. Cilj ovog rada je sinteza ključnih preporuka za dijagnostiku i terapiju astme u ordinaciji obiteljske medicine, s naglaskom na primjenu najnovijih smjernica i njihovog značenja za svakodnevni rad.

Rasprava. Na astmu je potrebno posumnjati u bolesnika s povremenim ili kroničnim respiratornim simptomima koji su varijabilni u intenzitetu i trajanju. Potvrda dijagnoze zahtijeva objektivne testove — prvenstveno spirometriju s testom reverzibilnosti protoka zraka i/ili mjerenje varijabilnosti vršnog izdisajnog protoka (eng. Peak Expiratory Flow, PEF), a dodatno se preporučuje mjerenje izdahnutog frakcionalnog dušikovog oksida (FeNO) kao marker upale tipa 2. GINA 2025 naglašava da bi dijagnoza astme trebala uključivati kombinaciju kliničkih simptoma i dokaza o varijabilnoj opstrukciji zraka, pri čemu FeNO može podržati dijagnozu, osobito kod sumnje na T2-upalnu komponentu bolesti. Temelj dugoročne kontrole astme je protuupalna terapija koja smanjuje rizik egzacerbacija i poboljšava kontrolu simptoma. GINA 2025 ističe protuupalni reliever pristup s kombiniranim inhalacijski kortikosteroid (IKS)-formoterol inhalatorom već od početnih stadija bolesti, što je povezano s manjim rizikom ozbiljnih egzacerbacija u usporedbi s tradicionalnim pristupom koji se oslanja isključivo na kratkodjelujući beta-agonist (eng. short acting beta agonist, SABA). Alternativa je svakodnevna terapija niskom ili umjerenom dozom IKS u kombinaciji s dugodjelujućim beta-agonistom (eng. long acting beta agonist, LABA). Terapija se prilagođava prema postignutoj kontroli simptoma i riziku egzacerbacija — „step-up“ kada je kontrola loša, te potencijalno „step-down“ nakon duljeg razdoblja dobre kontrole. Uz farmakoterapiju, smjernice naglašavaju važnost edukacije bolesnika, tehnike inhalacije, planova samoupravljanja bolesti i redovitih kontrolnih posjeta. NICE smjernice dodatno naglašavaju redovito praćenje kontrole astme, procjenu pridržavanja terapije i praćenje rizika, uz pristup prilagođen bolesniku.

Zaključak. Liječnik obiteljske medicine ima ključnu ulogu u ranom prepoznavanju, postavljanju dijagnoze i dugoročnom liječenju astme. Dosljedna primjena najnovijih smjernica u ordinaciji obiteljske medicine može značajno smanjiti rizik egzacerbacija, poboljšati kontrolu bolesti i kvalitetu života bolesnika s astmom.

LITERATURA:

1. Global Initiative for Asthma. 2025 Summary Guide for Asthma Management and Prevention. Global Strategy for Asthma Management and Prevention; 2025. [Internet]. Dostupno na: ginasthma.org.
2. National Institute for Health and Care Excellence (NICE), British Thoracic Society (BTS), Scottish Intercollegiate Guidelines Network (SIGN). Asthma: diagnosis, monitoring and chronic asthma management (NG245). 2024. [Internet]. Dostupno na: https://www.nice.org.uk/
3. Gruffydd-Jones K. BTS/NICE/SIGN guideline for asthma 2024: Diagnosis, monitoring and chronic asthma management. Prim Care Respir Med. 2025;35:22.
4. Popović-Grle S, et al. Smjernice za liječenje astme Hrvatskoga pulmološkog društva,
5. Hrvatskoga liječničkog zbora i Hrvatskoga torakalnog društva. Liječ Vjesn. 2023. 145:161–183

Asthma - approach to diagnosis and treatment in the family medicine office

Roberta Marković Štimac[1,2], Vojislav Ivetić[3,4]

1. Institution for primary health care Srdoči, Rijeka
2. Department of Family Medicine, Faculty of Medicine, University of Rijeka
3. Department of Family Medicine, Faculty of Medicine, University of Maribor
4. Sava Med d.o.o., Cesta k Dravi 8, 2000 Maribor, Slovenia

Keywords: asthma, GINA 2025, family medicine doctor
Correspondence address: Roberta Marković Štimac, Srdoči 65D, 51 000 Rijeka
E-mail: roberta.markovic@uniri.hr
ORCID: Roberta Marković Štimac: 0000-0002-0232-0249

Introduction with aim. Asthma is a chronic inflammatory disease of the airways characterized by variable and reversible airway obstruction, common symptoms such as wheezing, coughing, chest tightness and dyspnea, and the risk of serious exacerbations. It is important to recognize and diagnose it early in order to reduce the risk of complications, improve disease control and the patient's quality of life. According to the latest guidelines of the Global Initiative for Asthma (GINA 2025), the diagnosis is based on a characteristic clinical picture with objective findings that confirm variable airflow obstruction and/or airway inflammation. The NICE guidelines for 2024/2025 further emphasize the importance of a standardized approach to the diagnosis and treatment of asthma in patients of all ages. The aim of this paper is to synthesize key recommendations for the diagnosis and treatment of asthma in family medicine practices, with an emphasis on the application of the latest guidelines and their significance for daily work.

Discussion. Asthma should be suspected in patients with intermittent or chronic respiratory symptoms that vary in intensity and duration. Confirmation of the diagnosis requires objective testing, primarily spirometry with bronchodilator reversibility testing and/or assessment of peak expiratory flow (PEF) variability; measurement of fractional exhaled nitric oxide (FeNO) is additionally recommended as a marker of type 2 airway inflammation. The GINA 2025 guidelines emphasize that the diagnosis of asthma should be based on a combination of characteristic clinical symptoms and evidence of variable expiratory airflow obstruction, with FeNO serving as supportive evidence, particularly when type 2 inflammatory asthma is suspected. The cornerstone of long-term asthma control is anti-inflammatory therapy, which reduces the risk of exacerbations and improves symptom control. GINA 2025 highlights the anti-inflammatory reliever approach using a combination inhaled corticosteroid (ICS)–formoterol inhaler from the earliest stages of the disease, as this strategy is associated with a lower risk of severe exacerbations compared with the traditional approach relying solely on short-acting beta-agonists (SABA). An alternative approach is regular maintenance therapy with a low- or medium-dose ICS in combination with a long-acting beta-agonist (LABA). Treatment should be adjusted according to the level of symptom control and the risk of exacerbations, with step-up therapy when control is inadequate and potential step-down after a sustained period of good control. In addition to pharmacotherapy, current guidelines emphasize the importance of patient education, correct inhaler technique, individualized asthma action plans, and regular follow-up visits. The NICE guidelines further stress the need for regular monitoring of asthma control, assessment of treatment adherence, and ongoing risk evaluation within a patient-centered approach.

Conclusion. Family medicine doctors play a key role in the early recognition, diagnosis, and long-term management of asthma. Consistent implementation of the latest guidelines in the family medicine practice can significantly reduce the risk of exacerbations, improve disease control, and improve the quality of life of asthma patients.

REFERENCES:

1. Global Initiative for Asthma. 2025 Summary Guide for Asthma Management and Prevention. Global Strategy for Asthma Management and Prevention; 2025. [Internet]. Dostupno na: ginasthma.org.
2. National Institute for Health and Care Excellence (NICE), British Thoracic Society (BTS), Scottish Intercollegiate Guidelines Network (SIGN). Asthma: diagnosis, monitoring and chronic asthma management (NG245). 2024. [Internet]. Dostupno na: https://www.nice.org.uk/
3. Gruffydd-Jones K. BTS/NICE/SIGN guideline for asthma 2024: Diagnosis, monitoring and chronic asthma management. Prim Care Respir Med. 2025;35:22.
4. Popović-Grle S, et al. Smjernice za liječenje astme Hrvatskoga pulmološkog društva,
5. Hrvatskoga liječničkog zbora i Hrvatskoga torakalnog društva. Liječ Vjesn. 2023. 145:161–183

Najčešće upalne bolesti pluća

Ena Vučak[1]

1. Zavod za pulmologiju, KBC Sestre milosrdnice, Zagreb

Ključne riječi: infekcije donjeg dišnog sustava, pneumonija, uzročnici, liječnici opće/obiteljske medicine
Adresa za dopisivanje: Ena Vučak, Vinogradska cesta 29, 10000 Zagreb
E adresa: ena.vucak@gmail.com
ORCID: 0009-0009-0237-4720

Uvod s ciljem. Infekcije donjeg dišnog sustava predstavljaju čest zdravstveni problem te su i dalje jedan od vodećih uzroka smrtnosti i onesposobljenosti u svijetu. Pravodobno prepoznavanje uzročnika, identifikacija rizičnih skupina te adekvatna dijagnostika i liječenje ključni su za sprječavanje komplikacija. Cilj ovoga rada bio je prikazati najčešće upalne bolesti pluća važne za kliničku praksu liječnika obiteljske medicine.

Rasprava. U 2023. godini, infekcije donjih dišnih putova, isključujući COVID-19, bile su četvrti vodeći uzrok smrti u svijetu u svim dobnim skupinama, peti vodeći uzrok smrti kod odraslih starijih od 70 godina te drugi vodeći uzrok smrti kod djece mlađe od 5 godina. Učestalost ovih infekcija veća je u muškaraca, osoba zaraženih virusom humane imunodeficijencije (HIV) te bolesnika s kroničnim komorbiditetima, osobito kroničnom opstruktivnom plućnom bolešću (KOPB). Najčešće upalne bolesti donjeg dišnog sustava uključuju pneumoniju stečenu u zajednici (CAP, sCAP), egzacerbacije kroničnih plućnih bolesti infektivne etiologije, nozokomijalnu pneumoniju (HAP i VAP), akutne bronhitise i bronhiolitise, infekcije pleure, plućne apscese, tuberkulozu i ne-tuberkulozne mikobakterijske infekcije te gljivične i parazitske infekcije. Najčešći uzročnici često se razlikuju ovisno o dobnoj skupini i komorbiditetima, a ističu se S. pneumoniae, respiratorni virusi (osobito influenza i RSV), H. influenzae, S. aureus, i atipični uzročnici kao što su M. pneumoniae i Legionella spp., dok uzročnici poput P. aeruginosa i bakterija iz reda Enterobacterales, uzrokuju manji, ali klinički značajan udio infekcija. Klinički se prezentiraju vrućicom, slabošću i respiratornim simptomima kao što su kašalj, iskašljavanje, zaduha, pleuritična bol i hemoptiza, a tijek bolesti može biti akutan i subakutan odnosno kroničan. U starijih i imunokompromitiranih bolesnika tipični simptomu mogu izostati i često se prezentiraju općom slabosti, poremećenim mentalnim stanjem, a vrućica je odsutna u 30-40% pacijenata. Dijagnostički postupak uključuje laboratorijske, slikovne i mikrobiološke metode, pri čemu su mikrobiološki nalazi u više od polovice slučajeva negativni. Međutim, kontinuirani napredak molekularnih dijagnostičkih metoda omogućuje sve bolju detekciju uzročnika. Diferencijalna dijagnoza ne-infektivnih bolesti koje se mogu prezentirati sličnim simptomima je široka i uključuje kongestivno srčano zatajenje, plućnu emboliju, aspiraciju, karcinome pluća, intersticijske bolesti pluća, vaskulitise i alveolarnu hemoragiju. U inicijalnoj obradi osobitu važnost ima procjena težine bolesti, koja se temelji na kliničkoj slici i primjeni validiranih bodovnih sustava, kao i odluka o najprimjerenijem mjestu liječenja, što je često u domeni liječnika obiteljske medicine. Budući da je početno liječenje u većini slučajeva empirijsko, nužno je poznavanje najčešćih uzročnika, redovito praćenje bolesnika i pravodobno prepoznavanje pogoršanja, uz istodobno uvažavanje problema rastuće antimikrobne rezistencije te primjenu optimalnih terapijskih režima i trajanja liječenja.

Zaključak. Uloga liječnika obiteljske medicine ključna je u ranom prepoznavanju simptoma, procjeni težine bolesti, identifikaciji rizičnih bolesnika te donošenju odluka o liječenju u ambulantnim uvjetima ili upućivanju na bolničko liječenje. Pravodobna dijagnostika, racionalna primjena antibiotika u skladu s važećim smjernicama te provođenje preventivnih mjera, uključujući cijepljenje, temelj su smanjenja komplikacija i poboljšanja ishoda liječenja.

LITERATURA:

1. GBD 2023 Lower Respiratory Infections and Antimicrobial Resistance Collaborators. “Global burden of lower respiratory infections and aetiologies, 1990-2023: a systematic analysis for the Global Burden of Disease Study 2023.” The Lancet. Infectious diseases, S1473-3099(25)00689-9. 15 Dec. 2025, doi:10.1016/S1473-3099(25)00689-9
2. Martin-Loeches, Ignacio et al. “ERS/ESICM/ESCMID/ALAT guidelines for the management of severe community-acquired pneumonia.” Intensive care medicine vol. 49,6 (2023): 615-632. doi:10.1007/s00134-023-07033-8
3. Broaddus VC, Ernst JD, King TE Jr, Lazarus SC, Sarmiento KF, Schnapp LM, et al., editors. Murray & Nadel’s Textbook of Respiratory Medicine. 7th ed. Philadelphia, PA: Elsevier; 2021.
4. Ramirez JA. Overview of community-acquired pneumonia in adults, (pristupljeno 2.2.2026.). Dostupno s :https://www.uptodate.com

The most common inflammatory diseases of the lungs

Ena Vučak[1]

1. Division of Pulmonology, Department of Internal Medicine, Sestre Milosrdnice University Hospital Center, Zagreb

Keywords: lower respiratory tract infections, pneumonia, causative agents, general/family practitioners
Correspondence address: Ena Vučak, Vinogradska cesta 29, 10000 Zagreb
E-mail: ena.vucak@gmail.com
ORCID: 0009-0009-0237-4720

Introduction with aim. Lower respiratory tract infections represent a common health problem and remain one of the leading causes of mortality and disability worldwide. Timely recognition of the causative pathogens, identification of high-risk populations, and appropriate diagnostic and therapeutic approaches are crucial for the prevention of complications. The aim of this paper was to present the most common inflammatory lung diseases relevant to the clinical practice of family physicians.

Discussion. In 2023, lower respiratory tract infections, excluding COVID-19, were the fourth leading cause of death worldwide across all age groups, the fifth leading cause of death among adults older than 70 years, and the second leading cause of death in children under five years of age. The incidence of these infections is higher in men, individuals infected with the human immunodeficiency virus (HIV), and patients with chronic comorbidities, particularly chronic obstructive pulmonary disease (COPD). The most common inflammatory diseases of the lower respiratory tract include community-acquired pneumonia (CAP, severe CAP), infectious exacerbations of chronic lung diseases, nosocomial pneumonia (HAP and VAP), acute bronchitis and bronchiolitis, pleural infections, lung abscesses, tuberculosis and non-tuberculous mycobacterial infections, as well as fungal and parasitic infections. The most common causative agents vary depending on age group and comorbidities and predominantly include Streptococcus pneumoniae, respiratory viruses (especially influenza and RSV), Haemophilus influenzae, Staphylococcus aureus, and atypical pathogens such as Mycoplasma pneumoniae and Legionella spp., while pathogens such as Pseudomonas aeruginosa and bacteria from the order Enterobacterales account for a smaller but clinically significant proportion of infections. Clinically, these infections present with fever, fatigue, and respiratory symptoms such as cough, sputum production, dyspnoea, pleuritic chest pain, and haemoptysis, with an acute, subacute, or chronic disease course. In elderly and immunocompromised patients, typical symptoms may be absent, and presentation often includes general weakness and altered mental status; fever is absent in 30–40% of patients. The diagnostic approach includes laboratory, imaging, and microbiological methods, with microbiological results being negative in more than half of cases. However, continuous advances in molecular diagnostic techniques have enabled improved pathogen detection. The differential diagnosis of non-infectious diseases presenting with similar symptoms is broad and includes congestive heart failure, pulmonary embolism, aspiration, lung malignancies, interstitial lung diseases, vasculitides, and alveolar haemorrhage. Initial evaluation places particular emphasis on assessing disease severity based on clinical presentation and validated scoring systems, as well as determining the most appropriate site of care, a decision often made by family physicians. As initial treatment is empirical in most cases, knowledge of the most common pathogens, regular patient follow-up, and timely recognition of clinical deterioration are essential, alongside consideration of the growing problem of antimicrobial resistance and the application of optimal therapeutic regimens and treatment durations.

Conclusion. The role of family physicians is crucial in the early recognition of symptoms, assessment of disease severity, identification of high-risk patients, and decision-making regarding outpatient management or referral for hospital treatment. Timely diagnostics, rational use of antibiotics in accordance with current guidelines, and the implementation of preventive measures, including vaccination, are fundamental to reducing complications and improving treatment outcomes.

REFERENCES:

1. GBD 2023 Lower Respiratory Infections and Antimicrobial Resistance Collaborators. “Global burden of lower respiratory infections and aetiologies, 1990-2023: a systematic analysis for the Global Burden of Disease Study 2023.” The Lancet. Infectious diseases, S1473-3099(25)00689-9. 15 Dec. 2025, doi:10.1016/S1473-3099(25)00689-9
2. Martin-Loeches, Ignacio et al. “ERS/ESICM/ESCMID/ALAT guidelines for the management of severe community-acquired pneumonia.” Intensive care medicine vol. 49,6 (2023): 615-632. doi:10.1007/s00134-023-07033-8
3. Broaddus VC, Ernst JD, King TE Jr, Lazarus SC, Sarmiento KF, Schnapp LM, et al., editors. Murray & Nadel’s Textbook of Respiratory Medicine. 7th ed. Philadelphia, PA: Elsevier; 2021.
4. Ramirez JA. Overview of community-acquired pneumonia in adults, (pristupljeno 2.2.2026.). Dostupno s :https://www.uptodate.com

Alergijski rinitis u svakodnevnoj praksi liječnika obiteljske medicine

Nina Bašić-Marković[1,2,3] , Suzana Stanković[4]

1. Ustanova za primarnu zdravstvenu zaštitu Srdoči, Rijeka
2. Medicinski fakultet Sveučilišta u Rijeci
3. Društvo nastavnika opće/obiteljske medicine
4. Dom zdravlja Pirot, Srbija

Ključne riječi: alergijski rinitis, obiteljska medicina, kliničke smjernice
Adresa za dopisivanje: Nina Bašić-Marković, Škrljevo 88a, 51223 Škrljevo
E adresa: nina.basic@hi.t-com.hr
ORCID: Nina Bašić-Marković: 0000-0001-6296-6394
Suzana Stanković: 0000-0001-5406-7129

Uvod s ciljem. Alergijski rinitis (AR) jedna je od najčešćih kroničnih bolesti u populaciji te predstavlja značajan javnozdravstveni problem. Unatoč visokoj prevalenciji, AR je često nedovoljno prepoznat i suboptimalno liječen u primarnoj zdravstvenoj zaštiti. Posljedice uključuju narušenu kvalitetu života, smanjenu radnu i školsku učinkovitost te pogoršanje komorbidnih stanja, osobito astme. Cilj ovog rada je prikazati suvremeni, dokazima utemeljen pristup dijagnostici i liječenju alergijskog rinitisa u ordinaciji liječnika obiteljske medicine, temeljen na analizi relevantne literature i važećih stručnih preporuka.

Metode. Proveden je pregled literature u bazama podataka UpToDate i PubMed korištenjem ključnih riječi alergijski rinitis (engl. allergic rhinitis), etiologija (engl. etiology) i obiteljska medicina (engl. family practice). Uključni kriteriji bili su dostupnost cjelovitih preglednih članaka na engleskom jeziku objavljenih u razdoblju od 2020. do 2025. godine. Analizirana su ukupno 32 rada, uključujući međunarodne smjernice i konsenzusne dokumente.

Rezultati. Na temelju analize dostupne literature, uključujući Međunarodni konsenzusni dokument o alergiji i rinologiji (engl. International Consensus Statement on Allergy and Rhinology – ICAR) iz 2023. godine, prikazane su suvremene preporuke za dijagnostiku i liječenje alergijskog rinitisa, s naglaskom na dijagnostičke kriterije, patofiziološke mehanizme, terapijske algoritme i indikacije za upućivanje specijalistu. Poseban naglasak stavljen je na kliničku primjenjivost preporuka u primarnoj zdravstvenoj zaštiti. Dijagnoza AR temelji se na tipičnoj kliničkoj slici uz obaveznu potvrdu IgE-posredovane senzibilizacije. Intranasalni kortikosteroidi predstavljaju terapiju prve linije zbog najveće učinkovitosti u kontroli svih simptoma, uključujući nosnu opstrukciju. Kod nedovoljne kontrole preporučuje se kombinirana terapija intranasalnim kortikosteroidima i antihistaminicima. Alergen-specifična imunoterapija jedina je terapija koja može promijeniti prirodni tijek bolesti te se razmatra kod bolesnika s perzistentnim simptomima. Posebnu pažnju potrebno je posvetiti prepoznavanju komorbiditeta, osobito astme.

Zaključak. Liječnik obiteljske medicine ima ključnu ulogu u ranom prepoznavanju, pravilnom liječenju i dugoročnom praćenju bolesnika s alergijskim rinitisom. Integracija suvremenih znanstvenih dokaza i međunarodnih preporuka omogućuje učinkovitu kontrolu simptoma, poboljšanje kvalitete života te smanjenje rizika od povezanih respiratornih bolesti.

LITERATURA:

1. Wise SK, et al. International consensus statement on allergy and rhinology: Allergic rhinitis - 2023. Int Forum Allergy Rhinol. 2023. 13(4):293-859.
2. Siddiqui ZA, Walker A, Pirwani MM, Tahiri M, Syed I. Allergic rhinitis: diagnosis and management. Br J Hosp Med (Lond). 2022;83(2):1-9
3. Sousa-Pinto B, et al. Intranasal antihistamines and corticosteroids in allergic rhinitis: A systematic review and meta-analysis. J Allergy Clin Immunol. 2024;154(2):340-354.
4. de Franchis R, et al. Can Early Nutrition Be Responsible for Future Gut Microbiota Changes and Different Health Outcomes? Nutrients. 2025;17(23):3721.
5. Zhang P. The Role of Diet and Nutrition in Allergic Diseases. Nutrients. 2023;15(17):3683.

Allergic Rhinitis in Everyday Family Medicine Practice

Nina Bašić-Marković[1,2,3] , Suzana Stanković[4]

1. Primary Health Care Center Srdoči, Rijeka, Croatia
2. Faculty of Medicine, University of Rijeka, Croatia
3. Association of Teachers in General Practice/ Family Medicine (ATGP/ FM), Croatia
4. Primary Health Care Center Pirot, Serbia

Keywords: allergic rhinitis; family medicine; clinical guidelines
Correspondence address: Nina Bašić-Marković, Škrljevo 88a, 51223 Škrljevo
E-mail: nina.basic@hi.t-com.hr
ORCID: Nina Bašić-Marković: 0000-0001-6296-6394
Suzana Stanković: 0000-0001-5406-7129

Introduction with aim. Allergic rhinitis (AR) is one of the most common chronic diseases in the general population and represents a significant public health problem. Despite its high prevalence, AR is often underrecognized and suboptimally treated in primary health care. Consequences include impaired quality of life, reduced work and school productivity, and worsening of comorbid conditions, particularly asthma. The aim of this paper is to present a contemporary, evidence-based approach to the diagnosis and management of allergic rhinitis in family medicine practice, based on the analysis of relevant literature and current professional recommendations.

Methods. A literature review was conducted using the UpToDate and PubMed databases with the keywords allergic rhinitis, etiology, and family practice. Inclusion criteria were the availability of full-text review articles published in English between 2020 and 2025. A total of 32 publications were analyzed, including international guidelines and consensus documents.

Results. Based on the analysis of the available literature, including the International Consensus Statement on Allergy and Rhinology (ICAR) published in 2023, current recommendations for the diagnosis and management of allergic rhinitis are presented, with an emphasis on diagnostic criteria, pathophysiological mechanisms, therapeutic algorithms, and indications for referral to a specialist. Special attention is given to the clinical applicability of these recommendations in primary health care. The diagnosis of AR is based on a typical clinical presentation with mandatory confirmation of IgE-mediated sensitization. Intranasal corticosteroids represent first-line therapy due to their superior efficacy in controlling all symptoms, including nasal obstruction. In cases of insufficient symptom control, combination therapy with intranasal corticosteroids and antihistamines is recommended. Allergen-specific immunotherapy is the only treatment capable of modifying the natural course of the disease and should be considered in patients with persistent symptoms. Particular attention should be paid to the identification of comorbidities, especially asthma.

Conclusion. The family physician plays a key role in the early recognition, appropriate management, and long-term follow-up of patients with allergic rhinitis. The integration of contemporary scientific evidence and international recommendations enables effective symptom control, improvement in quality of life, and reduction of the risk of associated respiratory diseases.

REFERENCES:

1. Wise SK, et al. International consensus statement on allergy and rhinology: Allergic rhinitis - 2023. Int Forum Allergy Rhinol. 2023. 13(4):293-859.
2. Siddiqui ZA, Walker A, Pirwani MM, Tahiri M, Syed I. Allergic rhinitis: diagnosis and management. Br J Hosp Med (Lond). 2022;83(2):1-9
3. Sousa-Pinto B, et al. Intranasal antihistamines and corticosteroids in allergic rhinitis: A systematic review and meta-analysis. J Allergy Clin Immunol. 2024;154(2):340-354.
4. de Franchis R, et al. Can Early Nutrition Be Responsible for Future Gut Microbiota Changes and Different Health Outcomes? Nutrients. 2025;17(23):3721.
5. Zhang P. The Role of Diet and Nutrition in Allergic Diseases. Nutrients. 2023;15(17):3683.

Panel kronične bubrežne bolesti

Rudika Gmajnić[1,2,3], Matea Matić Ličanin[2, 3]

1. Specijalistička ordinacija obiteljske medicine prim. prof. dr. sc. Rudika Gmajnić, dr. med., spec. obiteljske medicine, Osijek
2. Medicinski fakultet Osijek, Sveučilište Josipa Jurja Strossmayera u Osijeku
3. Društvo nastavnika opće/obiteljske medicine, Kosirnikova 20, Zagreb

Ključne riječi: kronična bubrežna insuficijencija, primarna zdravstvena zaštita, obiteljska medicina, rano otkrivanje bolesti, preventivna zdravstvena zaštita
Adresa za dopisivanje: prim. prof. dr. sc. Rudika Gmajnić, Park kralja Petra Krešimira IV 6, 31000, Osijek
E adresa: rudika.gmajnic01@gmail.com
ORCID: Rudika Gmajnić: 0000-0003-2002-8898
Matea Matić Ličanin: 0000-0003-4429-3135

Uvod s ciljem: Kronična bubrežna bolest (KBB) predstavlja značajan javnozdravstveni problem zbog svoje visoke prevalencije, progresivnog tijeka i povezanosti s povećanim kardiovaskularnim rizikom. Procjenjuje se da KBB pogađa oko 10 % odrasle populacije, pri čemu velik dio bolesnika ostaje neprepoznat u ranim stadijima bolesti. U primarnoj zdravstvenoj zaštiti razvijen je preventivni panel za kroničnu bubrežnu bolest kao strukturirani alat za rano otkrivanje, praćenje i procjenu rizika u rizičnih skupina bolesnika. Cilj ovog rada je prikazati ulogu preventivnog panela za KBB u obiteljskoj medicini, njegov sadržaj i primjenu u skladu s aktualnim smjernicama te istaknuti njegove prednosti za liječnike i pacijente u svakodnevnoj kliničkoj praksi.

Rasprava: Preventivni panel za kroničnu bubrežnu bolest u obiteljskoj medicini osmišljen je kao standardizirani skup laboratorijskih i kliničkih pokazatelja koji omogućuju sustavno prepoznavanje ranih stadija KBB. Panel uključuje anamnestičke podatke kao što su dob, BMI, pušački status, osobna ili obiteljska anamneza bubrežnih bolesti, procjenu prisutnosti rizičnih čimbenika poput arterijske hipertenzije, šećerne bolesti i kardiovaskularnih bolesti te određivanje serumskog kreatinina uz izračun procijenjene glomerularne filtracije (eGFR), analizu albuminurije ili omjera albumin/kreatinin u urinu te mjerenje krvnoga tlaka. Primjena panela omogućuje pravodobno prepoznavanje bolesnika s povećanim rizikom za razvoj ili progresiju KBB, često prije pojave kliničkih simptoma. Literaturni izvori i smjernice naglašavaju da rana identifikacija KBB u primarnoj zdravstvenoj zaštiti omogućuje uvođenje nefroprotektivnih mjera, prilagodbu terapije i pravodobno upućivanje nefrologu, čime se može usporiti napredovanje bolesti i smanjiti rizik od kardiovaskularnih komplikacija. U praksi obiteljske medicine preventivni panel donosi brojne prednosti: strukturirani pristup skrbi, bolju kontrolu kroničnih bolesti, racionalnije korištenje dijagnostičkih postupaka i lakše praćenje bolesnika. Za pacijente panel znači ranije postavljanje dijagnoze, jasnije razumijevanje bolesti, aktivno sudjelovanje u liječenju te smanjenje rizika od razvoja terminalnog bubrežnog zatajenja. Unatoč dokazanim koristima, uočavaju se praznine u znanju i nedovoljna primjena panela, što upućuje na potrebu dodatne edukacije liječnika i bolesnika.

Zaključak: Preventivni panel za kroničnu bubrežnu bolest predstavlja učinkovit i praktičan alat u obiteljskoj medicini za rano otkrivanje i praćenje KBB. Sustavna primjena panela u primarnoj zdravstvenoj zaštiti omogućuje poboljšanje kvalitete skrbi, bolje ishode liječenja i racionalnije korištenje zdravstvenih resursa. Iskustvo iz svakodnevne kliničke prakse potvrđuje da preventivni panel ima važnu ulogu u edukaciji liječnika i pacijenata te predstavlja temelj suvremenog, preventivno usmjerenog pristupa skrbi za bolesnike s kroničnom bubrežnom bolešću.

LITERATURA:

1. Borg R, Kriegbaum M, Grand MK, Lind B, Andersen CL, Persson F. Chronic kidney disease in primary care: risk of cardiovascular events, end stage kidney disease and death. BMC Prim Care. 2023;24(1):128. doi:10.1186/s12875-023-02077-7
2. Kampmann JD, Heaf JG, Mogensen CB, Mickley H, Wolff DL, Brandt F. Prevalence and incidence of chronic kidney disease stage 3-5 - results from KidDiCo. BMC Nephrol. 2023;24(1):17. doi:10.1186/s12882-023-03056-x
3. Fraser SD, Blakeman T. Chronic kidney disease: identification and management in primary care. Pragmat Obs Res. 2016;7:21-32. doi:10.2147/POR.S97310
4. Vučak J, Vučak E, Balint I. Dijagnostički pristup pacijentima s kroničnom bubrežnom bolešću. Acta medica Croatica. 2016;70(4-5):289-294. Dostupno na: https://hrcak.srce.hr/179227

Chronic Kidney Disease panel

Rudika Gmajnić[1, 2, 3], Matea Matić Ličanin[2, 3]

1. Specialist Family Medicine Practice, Prim. Prof. Dr. sc. Rudika Gmajnić, MD, Specialist Family Medicine, Osijek
2. Faculty of Medicine Osijek, Josip Juraj Strossmayer University of Osijek
3. Association of teachers in general practice / family medicine

Keywords: kronična bubrežna insuficijencija, primarna zdravstvena zaštita, obiteljska medicina, rano otkrivanje bolesti, preventivna zdravstvena zaštita
Correspondence address: prim. prof. dr. sc. Rudika Gmajnić, Park kralja Petra Krešimira IV 6, 31000, Osijek
E-mail: rudika.gmajnic01@gmail.com
ORCID: Rudika Gmajnić: 0000-0003-2002-8898
Matea Matić Ličanin: 0000-0003-4429-3135

Introduction with aim: Chronic kidney disease (CKD) is a significant public health problem due to its high prevalence, progressive course and association with increased cardiovascular risk. It is estimated that CKD affects about 10% of the adult population, with a large proportion of patients remaining unrecognized in the early stages of the disease. A preventive panel for chronic kidney disease has been developed in primary health care as a structured tool for early detection, monitoring and risk assessment in at-risk patient groups. The aim of this paper is to present the role of the CKD prevention panel in family medicine, its content and application in accordance with current guidelines, and to highlight its advantages for doctors and patients in everyday clinical practice.

Discussion: The CKD prevention panel in family medicine is designed as a standardized set of laboratory and clinical indicators that enable the systematic recognition of early stages of CKD. The panel includes anamnestic data such as age, BMI, smoking status, personal or family history of kidney disease, assessment of the presence of risk factors such as arterial hypertension, diabetes and cardiovascular disease, and determination of serum creatinine with calculation of estimated glomerular filtration rate (eGFR), analysis of albuminuria or the albumin/creatinine ratio in urine, and measurement of blood pressure. Implementation of the panel allows timely identification of patients at increased risk of developing or progressing CKD, often before the appearance of clinical symptoms. Evidence from the literature and current guidelines emphasize that early recognition of CKD in primary care enables the initiation of nephroprotective measures, optimization of pharmacotherapy, and timely referral to a nephrologist, thereby slowing disease progression and reducing the risk of cardiovascular complications. In family medicine practice, the preventive panel brings numerous advantages: a structured approach to care, better control of chronic diseases, more rational use of diagnostic procedures, and easier monitoring of patients. For patients, the panel means earlier diagnosis, clearer understanding of the disease, active participation in treatment, and reduced risk of developing end-stage renal failure. Despite the proven benefits, gaps in knowledge and insufficient application of the panel are observed, which indicates the need for additional education of doctors and patients.

Conclusion: The preventive panel for chronic kidney disease represents an effective and practical tool in family medicine for the early detection and monitoring of CKD. Its systematic use in primary health care improves quality of care, treatment outcomes, and rational use of health care resources. Experience from everyday clinical practice confirms that the preventive panel plays an important role in the education of doctors and patients and represents the foundation of a modern, preventive approach to the care of patients with chronic kidney disease.

REFERENCES:

1. Borg R, Kriegbaum M, Grand MK, Lind B, Andersen CL, Persson F. Chronic kidney disease in primary care: risk of cardiovascular events, end stage kidney disease and death. BMC Prim Care. 2023;24(1):128. doi:10.1186/s12875-023-02077-7
2. Kampmann JD, Heaf JG, Mogensen CB, Mickley H, Wolff DL, Brandt F. Prevalence and incidence of chronic kidney disease stage 3-5 - results from KidDiCo. BMC Nephrol. 2023;24(1):17. doi:10.1186/s12882-023-03056-x
3. Fraser SD, Blakeman T. Chronic kidney disease: identification and management in primary care. Pragmat Obs Res. 2016;7:21-32. doi:10.2147/POR.S97310
4. Vučak J, Vučak E, Balint I. Dijagnostički pristup pacijentima s kroničnom bubrežnom bolešću. Acta medica Croatica. 2016;70(4-5):289-294. Dostupno na: https://hrcak.srce.hr/179227

Debljina kao kronična bolest i neovisni čimbenik rizika za razvoj kronične bubrežne bolesti u ambulanti obiteljskog liječnika

Sanda Pribić[1,2,3]

1. Privatna ordinacija obiteljske medicine
2. Fakultet za dentalnu medicinu i zdravstvo Osijek
3. Društvo nastavnika opće/obiteljske medicine

Ključne riječi: kronična bubrežna insuficijencija, primarna zdravstvena zaštita, obiteljska medicina, rano otkrivanje bolesti, preventivna zdravstvena zaštita
Adresa za dopisivanje: prim. prof. dr. sc. Rudika Gmajnić, Park kralja Petra Krešimira IV 6, 31000, Osijek
E adresa: rudika.gmajnic01@gmail.com
ORCID: Rudika Gmajnić: 0000-0003-2002-8898
Matea Matić Ličanin: 0000-0003-4429-3135

Uvod s ciljem: Debljina je kronična, relapsirajuća i multifaktorska bolest obilježena poremećajem regulacije tjelesne mase i funkcije adipocitnog tkiva. U suvremenoj medicini prepoznaje se kao samostalna bolest, a ne isključivo kao čimbenik rizika. Osim posrednog učinka putem šećerne bolesti tipa 2 i arterijske hipertenzije, debljina ima izravan i neovisan patogenetski učinak na bubrege te predstavlja značajan čimbenik rizika za razvoj kronične bubrežne bolesti (KBB). Prema globalnim epidemiološkim procjenama, KBB zahvaća približno 14 % odrasle populacije, dok prevalencija prekomjerne tjelesne mase i debljine u europskoj populaciji prelazi 60 %. Cilj rada jest prikazati debljinu kao kroničnu bolest i neovisni čimbenik rizika za razvoj i progresiju KBB, uz naglasak na probir KBB i liječenje debljine u ambulanti obiteljskog liječnika.

Rasprava: Epidemiološki podaci potvrđuju jasnu, doznim odnosom uvjetovanu povezanost između indeksa tjelesne mase (BMI) i rizika razvoja KBB. Osobe s BMI ≥30 kg/m² imaju 1,5–2,5 puta veći rizik za razvoj KBB u usporedbi s osobama normalne tjelesne mase, dok porast BMI-a za 5 kg/m² povećava rizik razvoja KBB za približno 28 %. Abdominalna debljina dodatno je povezana s 1,4–2,0 puta većim rizikom pojave albuminurije, neovisno o prisutnosti šećerne bolesti i arterijske hipertenzije. Kod osoba s teškom debljinom (BMI ≥35 kg/m²) rizik razvoja završnog stadija bubrežne bolesti povećan je 2,5–3 puta. Debljina izravno utječe na bubrežnu funkciju putem glomerularne hiperfiltracije i rane pojave albuminurije, što dovodi do progresivnog pada procijenjene glomerularne filtracije. Ovi mehanizmi mogu biti prisutni i u odsutnosti drugih uzroka sekundarne KBB, čime se potvrđuje neovisna patogenetska uloga debljine.U ambulanti obiteljske medicine osobe s debljinom predstavljaju prioritetnu rizičnu skupinu za probir KBB. Sukladno smjernicama, preporučuje se redovita procjena bubrežne funkcije određivanjem procijenjene glomerularne filtracije i omjera albumin/kreatinin u urinu, uz potvrdu kroničnosti nalaza. Pravodobno prepoznavanje omogućuje rano uvođenje nefroprotektivnih mjera i praćenje progresije bolesti.Liječenje debljine ima ključnu ulogu u prevenciji i usporavanju KBB. Uz intervencije u životnom stilu, suvremene smjernice naglašavaju važnost farmakološkog liječenja debljine. Agonisti GLP-1 receptora i dvostruki agonisti GLP-1/GIP omogućuju postizanje klinički značajnog i održivog smanjenja tjelesne mase od 10–20 %, uz povoljan učinak na albuminuriju, glikemijsku kontrolu i ukupni kardiometabolički rizik.

Zaključak: Debljina je kronična bolest i neovisni čimbenik rizika za razvoj kronične bubrežne bolesti. Sustavni probir KBB kod osoba s debljinom te dugoročno, strukturirano liječenje debljine, uključujući farmakoterapiju, ključni su elementi prevencije i ranog otkrivanja KBB u ambulanti obiteljskog liječnika.

LITERATURA:

1. KDIGO CKD Work Group. KDIGO 2024 clinical practice guideline for the evaluation and management of chronic kidney disease. Kidney Int. 2024;105(Suppl 4):S1–S15
2. GBD Chronic Kidney Disease Collaboration. Global burden of chronic kidney disease, 1990–2023: a systematic analysis for the Global Burden of Disease Study 2023. Lancet. 2024;403(10431):1789–1832.
3. Wang Y, Chen X, Song Y, Caballero B, Cheskin LJ. Association between body mass index and risk of chronic kidney disease: a systematic review and meta-analysis. J Am Soc Nephrol. 2018;29(10):2524–2536.
4. Chang AR, Grams ME, Navaneethan SD. Obesity and kidney disease. Clin J Am Soc Nephrol. 2017;12(9):1444–1452.
5. Rubino F, Puhl RM, Cummings DE, et al. Joint international consensus statement for ending stigma of obesity. Lancet Diabetes Endocrinol. 2020;8(7):545–558.

Obesity as a Chronic Disease and an Independent Risk Factor for the Development of Chronic Kidney Disease in Primary Care

Sanda Pribić[1,2,3]

1. Private Family Medicine Practice
2. Faculty of Dental Medicine and Health Osijek
3. Society of Teachers of General/Family Medicine

Keywords: family medicine; obesity; chronic kidney disease; screening; obesity pharmacotherapy
Correspondence address: Osijek, Park k. Petra Krešimira IV/6, Croatia
E-mail: sandamfos@gmail.com
ORCID: 0000-0002-1794-453X

Introduction with aim: Obesity is a chronic, relapsing and multifactorial disease characterized by dysregulation of body weight control and adipose tissue function. In modern medicine, obesity is recognized as a disease entity rather than solely a risk factor. In addition to its indirect effects mediated through type 2 diabetes mellitus and arterial hypertension, obesity exerts a direct and independent pathogenic effect on the kidneys and represents a significant risk factor for the development of chronic kidney disease (CKD). According to global epidemiological estimates, CKD affects approximately 14% of the adult population, while the prevalence of overweight and obesity in the European population exceeds 60%. The aim of this paper is to present obesity as a chronic disease and an independent risk factor for the development and progression of CKD, with emphasis on CKD screening and obesity management in primary care.

Discussion: Epidemiological data demonstrate a clear dose–response relationship between body mass index (BMI) and the risk of CKD. Individuals with BMI ≥30 kg/m² have a 1.5–2.5-fold increased risk of developing CKD compared with individuals of normal body weight, while each 5 kg/m² increase in BMI is associated with an approximately 28% higher risk of CKD. Abdominal obesity is additionally associated with a 1.4–2.0-fold increased risk of albuminuria, independent of diabetes mellitus or arterial hypertension. In individuals with severe obesity (BMI ≥35 kg/m²), the risk of end-stage kidney disease is increased 2.5–3-fold.Obesity directly affects renal function through glomerular hyperfiltration and early onset of albuminuria, leading to a progressive decline in estimated glomerular filtration rate. These mechanisms may occur even in the absence of other causes of secondary CKD, confirming the independent pathogenic role of obesity in kidney damage.In primary care settings, individuals with obesity represent a priority risk group for CKD screening. According to current guidelines, regular assessment of kidney function is recommended, including measurement of estimated glomerular filtration rate and urinary albumin-to-creatinine ratio, with confirmation of chronicity. Early identification enables timely implementation of nephroprotective measures and monitoring of disease progression. Management of obesity plays a crucial role in the prevention and slowing of CKD progression. In addition to lifestyle interventions, contemporary guidelines emphasize the importance of pharmacological treatment of obesity. Glucagon-like peptide-1 receptor agonists and dual GLP-1/GIP receptor agonists enable clinically meaningful and sustained weight loss of 10–20%, with favorable effects on albuminuria, glycaemic control and overall cardiometabolic risk.

Conclusion: Obesity is a chronic disease and an independent risk factor for the development of chronic kidney disease. Systematic CKD screening in individuals with obesity and long-term, structured obesity management, including pharmacotherapy, represent key elements of CKD prevention and early detection in primary care.

REFERENCES:

1. KDIGO CKD Work Group. KDIGO 2024 clinical practice guideline for the evaluation and management of chronic kidney disease. Kidney Int. 2024;105(Suppl 4):S1–S15
2. GBD Chronic Kidney Disease Collaboration. Global burden of chronic kidney disease, 1990–2023: a systematic analysis for the Global Burden of Disease Study 2023. Lancet. 2024;403(10431):1789–1832.
3. Wang Y, Chen X, Song Y, Caballero B, Cheskin LJ. Association between body mass index and risk of chronic kidney disease: a systematic review and meta-analysis. J Am Soc Nephrol. 2018;29(10):2524–2536.
4. Chang AR, Grams ME, Navaneethan SD. Obesity and kidney disease. Clin J Am Soc Nephrol. 2017;12(9):1444–1452.
5. Rubino F, Puhl RM, Cummings DE, et al. Joint international consensus statement for ending stigma of obesity. Lancet Diabetes Endocrinol. 2020;8(7):545–558.

Šećerna bolest i kronična bubrežna bolest: uloga obiteljskog liječnika u prepoznavanju i skrbi

Jelena Šakić Radetić[1,2]

1. Dom zdravlja Osječko-baranjske županije
2. Medicinski fakultet, Sveučilište Josipa Jurja Strossmayera u Osijeku

Ključne riječi: šećerna bolest, kronična bubrežna bolest, primarna zdravstvena zaštita, obiteljska medicina, probir
Adresa za dopisivanje: Jelena Šakić Radetić, Prolaz Snježne Gospe 1B, Osijek
E adresa: jsakic@mefos.hr
ORCID: 0000-0002-9935-4962

Uvod s ciljem: Kronična bubrežna bolest predstavlja jednu od najčešćih komplikacija šećerne bolesti s visokim utjecajem na morbiditet, mortalitet i troškove zdravstvene skrbi. Unatoč dostupnim metodama probira, rani stadiji dijabetičke bubrežne bolesti su često asimptomatski i nerijetko ostaju neprepoznati u primarnoj zdravstvenoj zaštiti. U tim ranim fazama kronične bubrežne bolesti, kada su terapijske intervencije najdjelotvornije, pacijenti su najčešće isključivo u skrbi obiteljskog liječnika, što primarnu zdravstvenu zaštitu stavlja u središte dijagnostike i zbrinjavanja. Cilj ovog pregleda bio je sintetizirati najnovije spoznaje o povezanosti šećerne bolesti i kronične bubrežne bolesti te naglasiti ulogu obiteljskog liječnika u ranom otkrivanju, procjeni rizika, inicijalnom liječenju i koordinaciji skrbi.

Rasprava: Pregled je obuhvatio najnovije kliničke smjernice i relevantne publikacije koje su identificirale probir bubrežne bolesti kao ključnu aktivnost u ordinaciji obiteljskog liječnika. Godišnji probir s procjenjenom glomerularnom filtracijom (eGFR) i omjerom albumin/kreatinin u urinu (UACR) preporučuje se za sve bolesnike sa šećernom bolesti, kako bi se prepoznali rani znakovi oštećenja bubrega. Interpretacija vrijednosti eGFR i UACR omogućila je obiteljskim liječnicima pravovremenu stratifikaciju rizika i donošenje odluke o potrebama praćenja i upućivanja nefrologu. Recentne terapijske preporuke obuhvatile su ranu primjenu SGLT2 inhibitora, neovisno o razini glikemije, zbog njihovih dokazanih bubrežnih i kardiovaskularnih povoljnih učinaka, te uključivanje agonista GLP-1 receptora kod bolesnika s povišenim kardiovaskularnim rizikom. Uloga obiteljskog liječnika obuhvaćala je procjenu indikacija, praćenje nuspojava i suradnju s nefrologom i/ili dijabetologom kad je to bilo potrebno. Uz to, obiteljski liječnik kontrolira krvni tlak i druge komorbiditete, te pruža edukaciju pacijentu o važnosti prehrane, farmakoterapiji i modifikaciji čimbenika rizika. Primjenom integrirane skrbi u primarnoj praksi postignuto je pravovremeno uvođenje nefroprotektivnih mjera i smanjen rizik progresije bolesti.

Zaključak: Obiteljski liječnik ima ključnu ulogu u ranom otkrivanju i kontinuiranom upravljanju dijabetičkom bubrežnom bolešću kroz probir, interpretaciju nalaza, iniciranje suvremenog liječenja i koordinaciju multidisciplinarne skrbi. Ovaj pristup je utemeljen na dokazima i predstavlja osnovni mehanizam za smanjenje progresije bolesti i poboljšanje ishoda bolesnika u primarnoj zdravstvenoj zaštiti.

LITERATURA:

1. Levin A, Ahmed SB, Carrero JJ, Foster B, Francis A, et al. Executive summary of the KDIGO 2024 Clinical Practice Guideline for the Evaluation and Management of Chronic Kidney Disease: known knowns and known unknowns. Kidney Int. 2024 Apr;105(4):684-701. doi: 10.1016/j.kint.2023.10.016. PMID: 38519239.
2. Levin A, Okpechi IG, Caskey FJ, et al. Perspectives on early detection of chronic kidney disease: the facts, the questions, and a proposed framework for 2023 and beyond. Kidney Int. 2023;103:1004–1008.
3. Neuen BL, Young T, Heerspink HJL, Neal B, Perkovic V, et al. SGLT2 inhibitors for the prevention of kidney failure in patients with type 2 diabetes: a systematic review and meta-analysis. Lancet Diabetes Endocrinol. 2019 Nov;7(11):845-854. doi: 10.1016/S2213-8587(19)30256-6.
4. Agarwal R, Green JB, Heerspink HJ, Mann JF, McGill JB, et al. Finerenone with Empagliflozin in Chronic Kidney Disease and Type 2 Diabetes. N Engl J Med 2025;393:533-543. doi: 10.1056/NEJMoa2410659
5. American Diabetes Association Professional Practice Committee for Diabetes; 11. Chronic Kidney Disease and Risk Management: Standards of Care in Diabetes—2026. Diabetes Care 1 January 2026; 49 (Supplement_1): S246–S260. https://doi.org/10.2337/dc26-S011

Diabetes Mellitus and Chronic Kidney Disease: The Role of the Family Physician in Early Detection and Care

Jelena Šakić Radetić[1,2]

1. Osijek-Baranja County Health Center
2. Faculty of Medicine, Josip Juraj Strossmayer University of Osijek

Keywords: diabetes mellitus; chronic kidney disease; primary healthcare; family medicine; screening
Correspondence address: Jelena Šakić Radetić, Prolaz Snježne Gospe 1B, Osijek
E-mail: jsakic@mefos.hr
ORCID: 0000-0002-9935-4962

Introduction with Aim: Chronic kidney disease (CKD) represents one of the most common complications of diabetes mellitus, with a substantial impact on morbidity, mortality, and healthcare costs. Despite the availability of screening methods, early stages of diabetic kidney disease (DKD) are frequently asymptomatic and therefore often remain undetected in primary care. In these early stages, when therapeutic interventions are most effective, patients are typically managed exclusively by family physicians, positioning primary care at the centre of diagnostic evaluation and clinical decision-making. The aim of this review was to summarise recent evidence on the relationship between diabetes and CKD and to highlight the role of the family physician in early detection, risk assessment, initial treatment, and coordination of care.

Discussion: This review included recent clinical guidelines and relevant publications identifying kidney disease screening as a key activity within family medicine. Annual screening with estimated glomerular filtration rate (eGFR) and urine albumin-to-creatinine ratio (UACR) is recommended for all patients with diabetes in order to detect early renal impairment. The interpretation of eGFR and UACR values enabled family physicians to stratify risk in a timely manner and determine the need for follow-up or referral to a nephrologist. Current therapeutic recommendations emphasise the early initiation of SGLT2 inhibitors, regardless of glycaemic control, due to their proven renal and cardiovascular benefits, as well as the use of GLP-1 receptor agonists in patients with elevated cardiovascular risk. The role of the family physician included assessing therapeutic indications, monitoring side effects, and collaborating with nephrologists and/or diabetologists when necessary. In addition, family physicians addressed blood pressure control and other comorbidities while providing patient education on the importance of diet, medication adherence, and risk factor modification. Through integrated care within the primary care setting, timely implementation of nephroprotective measures was achieved, reducing the risk of disease progression.

Conclusion: Family physicians play a key role in the early identification and ongoing management of diabetic kidney disease through screening, interpretation of clinical findings, initiation of evidence-based therapy, and coordination of multidisciplinary care. This evidence-based approach is a fundamental mechanism for slowing disease progression and improving patient outcomes in primary healthcare.

REFERENCES:

1. Levin A, Ahmed SB, Carrero JJ, Foster B, Francis A, et al. Executive summary of the KDIGO 2024 Clinical Practice Guideline for the Evaluation and Management of Chronic Kidney Disease: known knowns and known unknowns. Kidney Int. 2024 Apr;105(4):684-701. doi: 10.1016/j.kint.2023.10.016. PMID: 38519239.
2. Levin A, Okpechi IG, Caskey FJ, et al. Perspectives on early detection of chronic kidney disease: the facts, the questions, and a proposed framework for 2023 and beyond. Kidney Int. 2023;103:1004–1008.
3. Neuen BL, Young T, Heerspink HJL, Neal B, Perkovic V, et al. SGLT2 inhibitors for the prevention of kidney failure in patients with type 2 diabetes: a systematic review and meta-analysis. Lancet Diabetes Endocrinol. 2019 Nov;7(11):845-854. doi: 10.1016/S2213-8587(19)30256-6.
4. Agarwal R, Green JB, Heerspink HJ, Mann JF, McGill JB, et al. Finerenone with Empagliflozin in Chronic Kidney Disease and Type 2 Diabetes. N Engl J Med 2025;393:533-543. doi: 10.1056/NEJMoa2410659
5. American Diabetes Association Professional Practice Committee for Diabetes; 11. Chronic Kidney Disease and Risk Management: Standards of Care in Diabetes—2026. Diabetes Care 1 January 2026; 49 (Supplement_1): S246–S260. https://doi.org/10.2337/dc26-S011

Farmakoterapija kronične bubrežne bolesti

Marta Tundzeva[1], Katarina Stavrikj[1]

1. Centar porodične medicine, Medicinskifakultet, Sveučilište “Sv. Ćirilo I Metodije”, Skoplje, R.S Makedonija

Ključne riječi: kronična bolest bubrega, kardiovaskularni rizik, farmakoterapija, komorbiditeti
Adresa za dopisivanje: Marsal Tito br 21/2-2,1000 Skopje, Sjeverna Makedonija
E adresa: mtundzeva@gmail.com
ORCID: Marta Tundzeva: 0000-0003-2754-2371
KatarinaStavrikj: 0000-0002-8319-4554

Uvod s ciljem: Kronična bolest bubrega (KBB) rijetko se javlja izolirano. Usvajanje pristupa usmjerenog na osobu i zajedničko liječenje ovih kroničnih stanja može dovesti do boljih ishoda liječenja pacijenata. Cilj ovog rada je predstaviti akcijski plan i strategije liječenja za liječenje KBB i komorbiditeta.

Rasprava: KBB se definira kao smanjena funkcija bubrega tijekom ≥ 3 mjeseca, što se otkriva procijenjenom ili izmjerenom brzinom glomerularne filtracije (GFR) < 60 mL/min/1,73 m2, i/ili oštećenjem bubrega tijekom ≥ 3 mjeseca. Manifestira se: albuminurijom (povećanim omjerom albumina i kreatinina u urinu [ACR]), ili hematurijom nakon isključenja urooloških uzroka, ili strukturnim abnormalnostima, ili patološkim abnormalnostima, koje se otkrivaju biopsijom bubrega. Postoji preklapanje između kronične bubrežne bolesti (KB), kardiovaskularnih bolesti i dijabetesa u smislu liječenja. Liječnici primarne zdravstvene zaštite liječe ono što je potrebno za KB s drugim stanjima i komorbiditetima. Svim osobama s kroničnom bubrežnom bolešću prvo treba propisati inhibitor enzima koji pretvara angiotenzin (ACE) ili blokator angiotenzinskih receptora (ARB) titriran do maksimalne doze. Više antihipertenziva može se kombinirati kako bi se postigle ciljne vrijednosti krvnog tlaka <130/80 mmHg. Smjernice preporučuju terapiju inhibitorima natrij-glukoznog kotransportera 2 (SGLT2i) za bolest bubrega s proteinurijom, sa ili bez dijabetesa, kontrola krvnog tlaka inhibitorima renin-angiotenzin-aldosteronskog sustava (RAASi) i liječenje proteinurije, kao i statini za smanjenje rizika od aterosklerotske kardiovaskularne bolesti. Novi dokazi podupiru upotrebu finerenona kod pacijenata s dijabetesom tipa 2 i kroničnom bubrežnom bolešću (KBB), kao i agonista GLP-1 receptora za zaštitne učinke na bubrege. Smjernice također naglašavaju važnost upravljanja nefrotoksinima i sprječavanja relapsa akutnog zatajenja bubrega putem edukacije pacijenata. Metformin i inhibitori SGLT2 su lijekovi koji se propisuju kod dijabetesa tipa 2 i kronične bubrežne bolesti (KB) za postizanje ciljane vrijednosti HbA1c ≤ 7%. Redoslijed dodavanja gore navedenih lijekova određuje se uvjerljivim indikacijama kao što su razine albuminurije, temeljni uzrok i sve komorbiditete. KBB nameće mnoge ciljeve liječenja i strategije za liječenje kardiovaskularnih bolesti i dijabetesa tipa 2 te zajedničko liječenje ovih kroničnih stanja. Doze lijekova koji se izlučuju putem bubrega treba prilagoditi prema funkciji bubrega, kako bi se smanjio rizik od nuspojava. Preporučuje se izbjegavanje nefrotoksina gdje god je to moguće. Nefarmakološko liječenje uključuje promjene načina života radi ključnih čimbenika rizika, uključujući prestanak pušenja, uravnoteženu prehranu, smanjenje alkohola, tjelesnu aktivnost i liječenje pretilosti.

Zaključak: Nije potrebno puno učiniti za liječenje kronične bubrežne bolesti (KB). Svaki klinički akcijski plan uključuje skup kliničkih i laboratorijskih procjena i mjera, u svrhu liječenja s farmakološkim i nefarmakološkim liječenjem, a sve s ciljem usporavanja progresije KB i smanjenja kardiovaskularnog rizika. Strategija liječnika primarne zdravstvene zaštite je pružiti podršku i potaknuti samopoštovanje, izgraditi dugoročan odnos s pacijentom i pronaći načine kako pomoći pacijentu, a sve s ciljem kontrole kvalitete pacijentovog života.

LITERATURA:

1. https://www.nice.org.uk/guidance/ng203/resources/chronic-kidney-disease-assessment-and-management-pdf-66143713055173
2. Awdishu L, Maxson R, Gratt C, Rubenzik T, Battistella M. KDIGO 2024 clinical practice guideline on evaluation and management of chronic kidney disease: A primer on what pharmacists need to know. Am J Health Syst Pharm. 2025 Jun 11;82(12):660-671. doi: 10.1093/ajhp/zxaf044. PMID: 40197825; PMCID: PMC12158546.
3. https://www.nottsapc.nhs.uk/media/cz1jrhbu/guidelines-for-management-of-chronic-kidney-disease-ckd-for-adults.pdf
4. El Nahas, Meguid, and Adeera Levin (eds), Chronic Kidney Disease: A practical guide to understanding and management, Oxford Clinical Nephrology Series (Oxford, 2009; online edn, Oxford Academic, 1 Feb. 2013), https://doi.org/10.1093/med/9780199549313.001.0001, accessed 23 Jan. 2026.
5. A practical guide to medicines for chronic kidney disease

Pharmacotherapy in Chronic Kidney Disease

Marta Tundzeva[1], Katarina Stavrikj[1]

1. Center of Family Medicine, Faculty of Medicine, University "St. Cyril and Methodius", Skopje, Republic of Macedonia

Keywords: CKD, cardiovascular risk, pharmacotherapy, comorbidities
Correspondence address: Marsal Tito br 21/2-2,1000 Skopje, Sjeverna Makedonija
E-mail: mtundzeva@gmail.com
ORCID: Marta Tundzeva: 0000-0003-2754-2371
KatarinaStavrikj: 0000-0002-8319-4554

Introduction with aim: Chronic kidney disease (CKD) rarely occurs in isolation. Adopting a person-centered approach to CKD and managing these chronic conditions together can lead to improved patient outcomes. The aim of this paper is to present an action plan and treatment strategies for managing CKD and managing comorbidities.

Discussion: CKD is defined as reduced kidney function for ≥ 3 months, as detected by an estimated or measured glomerular filtration rate (GFR) < 60 mL/min/1.73 m2, and/or kidney damage for ≥ 3 months. It is manifested by: albuminuria (increased urinary albumin/creatinine ratio [ACR]), or hematuria after exclusion of urological causes, or structural abnormalities, or pathological abnormalities, which are detected by kidney biopsy. There is overlap between CKD, cardiovascular disease, and diabetes in terms of management. Primary care physicians manage what is needed for CKD with other conditions and comorbidities. All people with CKD should first be prescribed an angiotensin-converting enzyme (ACE) inhibitor or angiotensin receptor blocker (ARB) titrated to the maximum dose. Multiple antihypertensives can be combined to achieve target blood pressure values <130/80mmHg. The guidelines recommend sodium-glucose cotransporter 2 inhibitor (SGLT2i) therapy for kidney disease with proteinuria, with or without diabetes, blood pressure control with renin-angiotensin-aldosterone system (RAASi) inhibitors and proteinuria management, as well as statins to reduce the risk of atherosclerotic cardiovascular disease. New evidence supports the use of finerenone in patients with type 2 diabetes and chronic kidney disease (CKD), as well as GLP-1 receptor agonists for kidney protective effects. The guidelines also emphasize the importance of nephrotoxin management and prevention of relapse from acute renal failure through patient education. Metformin and SGLT2 inhibitors are drugs prescribed in type 2 DM and CKD to target HbA1c ≤ 7%. The order in which the above medications are added is guided by compelling indications such as albuminuria levels, underlying cause, and any comorbidities. CKD imposes many treatment goals and strategies for managing cardiovascular disease and type 2 diabetes and managing these chronic conditions together. Doses of drugs that are eliminated by the kidneys should be adjusted according to kidney function, in order to reduce the risk of side effects. It is recommended to avoid nephrotoxins wherever possible for the same. Non-pharmacological treatment includes lifestyle modifications for key risk factors, including smoking cessation, balanced diet, alcohol reduction, physical activity, and obesity management.

Conclusion: Not much needs to be done to manage CKD. Any clinical action plan includes a set of clinical and laboratory assessments and measures, for management purposes with pharmacological and non-pharmacological treatment, all with the aim of slowing the progression of CKD and reducing cardiovascular risk. The primary care physician's strategy is to provide support and boost self-esteem, build a long-term relationship with the patient, and find ways to help the patient, all with the aim of controlling the patient's quality of life.

REFERENCES:

1. https://www.nice.org.uk/guidance/ng203/resources/chronic-kidney-disease-assessment-and-management-pdf-66143713055173
2. Awdishu L, Maxson R, Gratt C, Rubenzik T, Battistella M. KDIGO 2024 clinical practice guideline on evaluation and management of chronic kidney disease: A primer on what pharmacists need to know. Am J Health Syst Pharm. 2025 Jun 11;82(12):660-671. doi: 10.1093/ajhp/zxaf044. PMID: 40197825; PMCID: PMC12158546.
3. https://www.nottsapc.nhs.uk/media/cz1jrhbu/guidelines-for-management-of-chronic-kidney-disease-ckd-for-adults.pdf
4. El Nahas, Meguid, and Adeera Levin (eds), Chronic Kidney Disease: A practical guide to understanding and management, Oxford Clinical Nephrology Series (Oxford, 2009; online edn, Oxford Academic, 1 Feb. 2013), https://doi.org/10.1093/med/9780199549313.001.0001, accessed 23 Jan. 2026.
5. A practical guide to medicines for chronic kidney disease

Mineralno-koštana bolest u kroničnoj bubrežnoj bolesti

Lada Zibar[1,2]

1. Zavod za nefrologiju, Klinička bolnica Merkur, Zagreb, Hrvatska
2. Medicinski fakultet Osijek, Sveučilište Josipa Jurja Strossmayera u Osijeku, Osijek, Hrvatska

Ključne riječi: mineralno-koštana bolest, kronična bubrežna bolest
Adresa za dopisivanje: Zajčeva 19, 10000 Zagreb, Hrvatska
E adresa: ladazibar@gmail.com
ORCID: 0000-0002-5454-2353

Uvod s ciljem. Mineralno-koštana bolest (MKB) je dio kronične bubrežne bolesti (KBB). Cilj ovog izvješća je prikazati obilježja MKB-a u KBB-u i načela postupanja.

Rasprava. Prema novijoj teoriji javlja se već u ranijim stupnjevima KBB-a, tada klinički i laboratorijski neprepoznatljiva zbog kompenzacijskih procesa: primarni bi poremećaj bio smanjenje fosfaturije zbog smanjene funkcionalne bubrežne mase što potiče stvaranje FGF-23 (od engl. fibroblast growth factor – čimbenik rasta fibroblasta) u osteocitima koji inhibirajući reapsorpciju fosfora (P) u bubrežnim tubulima potiče fosfaturiju radi održanja normofosfatemije. FGF-23 istodobno potiče fibrotičke procese u bubrezima, a inhibicijom alfa-hidroksilaze smanjuje stvaranje aktivnog oblika vitamina D, (VD, 1,25-dihidroksikalciferola) u bubrezima. Prema klasičnoj paradigmi patofiziološki proces počinje nedostatkom 1,25-hidroksikalciferola zbog smanjenja bubrežne mase, s posljedičnom smanjenom crijevnom apsorpcijom kalcija (Ca) i P, smanjenom reapsorpcijom Ca iz bubrežnih tubula te hipokalcijemijom.Hipokalcijemija potiče paratireoidne žlijezde na stvaranje i lučenje parathormona (PTH) i nastaje sekundarni hiperparatireoidizam (SHPT). PTH potiče mobilizaciju Ca (i P, što pridonosi hiperfosfatemiji) iz kosti radi održanja normokalcijemije pa nastaje bubrežna osteodistrofija koja povećava rizik prijeloma. Smanjuje se fosfaturija (zbog smanjene bubrežne mase) pa u završnim stupnjevima neliječenog KBB-a nalazimo hipokalcijemiju, hiperfosfatemiju i hiperparatireoidizam. Bubrezi smanjene bubrežne mase ne mogu primjereno odgovoriti na poticaj PTH za stvaranje 1,25-hidroksikalcitriola, pa kalcijemija ostaje smanjena, a PTH povećan. Dijagnostički se MKB u KBB-u prepoznaje u trećem stupnju, izraženije s napredovanjem KBB-a. Liječi se nadoknadom VD-a (kalcitriol ili analozi) koji putem kalcijemije suprimira PTH, prehrani sa smanjenim fosfatima i vezivačima fosfata (smanjuju crijevnu apsorpciju P). SHPT u neprimjereno liječenih ili neliječenih i u onih u kojih dugo traje (bolesnici na dijalizi) dolazi do promjena na paratireoidnim žlijezdama gdje dolazi do autonomnog lučenja PTH, izvan utjecaja kalcijemije. Može se pokušati liječenje kalcimimeticima (djeluju inhibicijski na paratireoidno tkivo, poput kalcija), osobito u bolesnika s hiperkalcijemijom. U rezistentnih na farmakoterapiju potrebna je subtotalna paratireoidektomija. Hiperparatireoidizam je dugoročno praćen poremećajima Ca i P koji dovode do kalcifikata u stijenkama krvnih žila i drugih izvankoštanih kalcifikata. To povećava srčanožilni rizik i dovodi do smetnji kretanja i boli. Tjelovježba također pomaže u liječenju MKB-a u KBB-u.

Zaključak. MKB u KBB-u je još uvijek prevalentna, no današnji izgledi za dobre ishode puno su veći nego prije, zbog ranijeg liječenja, većeg farmakoterapijskog izbora, adekvatnije dijalize i češće bubrežne presadbe. Potrebno je bolje educirati bolesnike i njihove obitelji radi promjene načina prehrane i životnog stila u ovoj populaciji.

LITERATURA:

1. https://kdigo.org/wp-content/uploads/2017/02/2017-KDIGO-CKD-MBD-GL-Update.pdf
2. https://www.uptodate.com/contents/overview-of-chronic-kidney-disease-mineral-and-bone-disorder-ckd-mbd (posljednji pristup 31 Jan 2026)
3. Ketteler M, Block GA, Evenepoel P, Fukagawa M, Herzog CA, McCann L, et al. Chronic kidney disease–mineral and bone disorder: current state of the art and future directions. J Nephrol. 2025;38(2):245–260.
4. Salera D. Pathophysiology of chronic kidney disease–mineral and bone disorder. Clin Kidney J. 2025;18(Suppl 1):i3–i11.
5. Carullo N, Campolo J, Malatino L, Castellino P. Anemia and mineral bone disorder in chronic kidney disease: role of FGF-23, klotho and inflammation. Int J Mol Sci. 2024;25(23):12838.

Mineral and Bone Disorder in Chronic Kidney Disease

Lada Zibar[1,2]

1. Department of Nephrology, University Hospital Merkur, Zagreb, Croatia
2. Faculty of Medicine Osijek, Josip Juraj Strossmayer University of Osijek, Osijek, Croatia

Keywords: mineral and bone disease, chronic kidney disease
Correspondence address: Zajčeva 19, 10000 Zagreb, Hrvatska
E-mail: ladazibar@gmail.com
ORCID: 0000-0002-5454-2353

Introduction with aim. Mineral and bone disorder (MBD) is an integral component of chronic kidney disease (CKD). The aim of this paper is to present features and management of MBD in CKD.

Discussion. According to newer concept, MBD develops already in the earlier stages of CKD, when it is clinically and biochemically unrecognizable due to compensatory mechanisms. The primary disorder is considered to be reduced phosphaturia resulting from a decreased functional nephron mass, which stimulates the production of fibroblast growth factor-23 (FGF-23) in osteocytes. By inhibiting tubular phosphate reabsorption, FGF-23 promotes phosphaturia in order to maintain normophosphatemia. At the same time, FGF-23 promotes fibrotic processes in the kidneys and, by inhibiting α-hydroxylase, reduces the synthesis of the active form of vitamin D (1,25-dihydroxycholecalciferol) in the kidneys. According to the classical paradigm, the pathophysiological process begins with a deficiency of 1,25-dihydroxycholecalciferol due to reduced renal mass, leading to decreased intestinal absorption of calcium (Ca) and phosphate (P), reduced tubular calcium reabsorption, and subsequent hypocalcemia. Hypocalcemia stimulates parathyroid glands to increase the synthesis and secretion of parathyroid hormone (PTH), resulting in secondary hyperparathyroidism (SHPT). PTH promotes mobilization of Ca (and P, contributing to hyperphosphatemia) from bone in order to maintain normocalcemia, leading to renal osteodystrophy and an increased risk of fractures. Due to reduced nephron mass, phosphaturia decreases, and in the advanced stages of untreated CKD, hypocalcemia, hyperphosphatemia, and hyperparathyroidism are observed. Kidneys with reduced functional mass are unable to respond adequately to PTH stimulation for the synthesis of 1,25-dihydroxycholecalciferol, resulting in persistent hypocalcemia and elevated PTH levels. CKD-MBD is usually diagnosed from stage 3 CKD onward, with increasing severity as kidney disease progresses. Treatment includes vitamin D supplementation (calcitriol or its analogues), which suppresses PTH via normalization of Ca levels, P-restricted diet, and P binders to reduce intestinal P absorption. In inadequately treated or long-standing SHPT, particularly in dialysis patients, structural changes in the parathyroid glands may occur, leading to autonomous PTH secretion independent of Ca regulation. In such cases, treatment with calcimimetics may be attempted, especially in patients with hypercalcemia. In patients resistant to pharmacological therapy, subtotal parathyroidectomy is required. Long-term hyperparathyroidism is associated with disturbances of Ca and P metabolism that lead to vascular and other extraskeletal calcifications, increasing cardiovascular risk and causing mobility impairment and pain. Physical activity also contributes to the management of CKD-MBD.

Conclusion. CKD-MBD remains prevalent; however, current prospects for favorable outcomes are significantly better than in the past due to earlier intervention, a broader range of pharmacological options, more adequate dialysis, and more frequent kidney transplantation. Improved education of patients and their families regarding dietary and lifestyle modifications is essential in this population.

REFERENCES:

1. https://kdigo.org/wp-content/uploads/2017/02/2017-KDIGO-CKD-MBD-GL-Update.pdf
2. https://www.uptodate.com/contents/overview-of-chronic-kidney-disease-mineral-and-bone-disorder-ckd-mbd (posljednji pristup 31 Jan 2026)
3. Ketteler M, Block GA, Evenepoel P, Fukagawa M, Herzog CA, McCann L, et al. Chronic kidney disease–mineral and bone disorder: current state of the art and future directions. J Nephrol. 2025;38(2):245–260.
4. Salera D. Pathophysiology of chronic kidney disease–mineral and bone disorder. Clin Kidney J. 2025;18(Suppl 1):i3–i11.
5. Carullo N, Campolo J, Malatino L, Castellino P. Anemia and mineral bone disorder in chronic kidney disease: role of FGF-23, klotho and inflammation. Int J Mol Sci. 2024;25(23):12838.

Cjelovita skrb za pacijente s poremećajima hemostaze u obiteljskoj medicini

Nataša Mrduljaš-Đujić[1], Vedrana Burilović[2], Vanja Viali[3], Milena Kostić[4]

1. Specijalistička ordinacija obiteljske medicine Postira, Otok Brač.
2. Poliklinika Priska Med, Split
3. Medicinski fakultet Sveučilišta u Splitu, spec. ord. obit. med., Split.
4- Dom zdravlja "Dr Đorđe Kovačević" Lazarevac; Sekcija opšte medicine Srpskog lekarskog društva

Ključne riječi: hemostaza, obiteljska medicina, koagulacija, antikoagulansi, antiagregacijska terapija
Adresa za dopisivanje: Nataša Mrduljaš-Đujić, Polježice 6, 21410 Postira
E adresa: md.natasa@gmail.com
ORCID: Nataša Mrduljaš-Đujić: 0000-0002-0339-4354
Vedrana Burilović: 0009-0004-0689-5666
Vanja Viali https: 0009-0008-9986-7451
Milena Kostić: 0000-0002-4684-284X

Uvod s ciljem. Hemostaza je vitalni fiziološki proces kojim se ostvaruje ravnoteža između krvarenja i zgrušavanja i uključuje složenu interakciju krvnih žila, trombocita i plazmatskih faktora zgrušavanja. Regulacija ovih procesa temelj je ishoda svih bolesti i stanja. Cilj je ukazati na složenost skrbi za pacijenta s problemom hemostaze u obiteljskoj medicini.

Rasprava. Područje hemostaze otvara mnoštvo pitanja vezanih za skrb pacijenata. Brzi napredak, prije svega farmakoterapije i dijagnostike, nalaže stalnu obnovu i dopunu stečenih znanja važnih za praksu. Aktualne smjernice prije svega odnose se na uključivanje antiagregacijske i antikoagulantne terapije, što podrazumijeva otkrivanje i praćenje rizičnih pacijenata (rizični faktori poput pušenja, imobilizacije, maligniteta, uzimanja određenih lijekova itd., osobna anamneza tromboembolijskih događaja i sklonost krvarenju, te pozitivna obiteljska anamneza na tromboze ili krvarenja). U dijagnostici se koriste testovi prema indikaciji. Osnovne laboratorijske pretrage obuhvaćaju kompletnu krvnu sliku, PV/INR (ključan za praćenje pacijenata na varfarinu), aPTV (ukazuje na moguće poremećaje unutrašnjeg puta koagulacije-nedostatka faktora VIII i IX) i fibrinogen. Kod sumnje na duboku vensku trombozu/plućnu emboliju, za potvrdu ili isključenje potrebno je napraviti D-dimere, uz potrebnu radiološku dijagnostiku (UZ, RTG, CT angiografiju i sl.), te prema indikaciji obradu na trombofiliju (stanje koje označava povećanu sklonost stvaranju krvnih ugrušaka u krvnim žilama). Razlikuje se stečena trombofilija, kod koje se rade antitrombin III (aktivnost), protein C i protein S (nedostatak može uzrokovati trombozu, a uzroci mogu biti i prirođeni), homocistein (povišena razina povezana je s povećanim rizikom tromboze), antifosfoipidna protutijela (lupus antikoagulans, antikardiolipinska at (IgG i IgM), i βeta-2 glikoprotein I at (IgG i IgM)), i nasljedna kod koje se radi genetsko testiranje prema indikaciji. Ova pretraga ne predstavlja rutinsku proceduru. Postojeće kronične bolesti utječu na hemostazu, pa je nužno poznavati koje rizike za hemostazu nose (bolesti jetre, maligne bolesti, reumatološke, kardiološke, psihijatrijske itd.). Uz to, posebna pažnja usmjerena je na interakcije antiagregacijskih i antikoagulantnih lijekova s drugim lijekovima kao i s bezreceptnim pripravcima, u čemu je uloga ljekarnika veoma važna u svakodnevnoj praksi. Perioperativni (tzv. bridging) i postoperativni postupci vezani za hemostazu dio su suvremene skrbi kirurških pacijenata, a edukacija pacijenata je isto tako područje kojemu se posvećuje posebna pažnja. Osim navedenog, specifična znanja odnose se i na skrb za posebne skupine pacijenata kao što su npr. trudnice, te pacijenti s nasljednim poremećajima i način brige o članovima njihovih obitelji. Sve navedeno nedvosmisleno upućuje na nužnost interprofesionalne suradnje s bolničkim konzultantima (hematolog, transfuziolog, farmaceut, klinički farmakolog, kardiolog, vaskularni kirurg, itd.) kada su u pitanju poremećaji hemostaze.

Zaključak. Cjelovita skrb za pacijente uključuje poznavanje pacijenta i razumijevanje njegove bolesti i zdravstvenih pokazatelja od strane obiteljskih liječnika. Isto tako, za što ranije prepoznavanje i učinkovitije liječenje poremećaja hemostaze, posebno je važan timski rad, prepoznatljiv kroz suradnju obiteljskih liječnika s bolničkim konzultantima. Stoga je nužno uključiti obiteljskog liječnika u timove za personaliziranu skrb, posebno kompleksnih, multimorbidnih pacijenata.

LITERATURA:

1. Ho KH, van Hove M, Leng G. Trends in anticoagulant prescribing: a review of local policies in English primary care. BMC Health Serv Res. 2020;20:279. doi: 10.1186/s12913-020-5058-1.
2. Dejhalla E, Zavidić T. Primjena varfarina i novih oralnih antikoagulansa u odabranim ordinacijama obiteljske medicine - je li cijena to što nas ograničava? Med Fam Croat, Vol 29, No1-2, 2021str.15-21.
3. Deng Y, Tong Y, Deng Y, Zou L, Li S, Chen H. Non-vitamin K antagonist oral anticoagulants versus warfarin in patients with cancer and atrial fibrillation: a systematic review and meta-analysis. J Am Heart Assoc. 2019;8:e012540. doi: 10.1161/JAHA.119.012540.
4. Todd KE Jr. Hemostasis in primary care: A primer. Curr Probl Pediatr Adolesc Health Care. 2025;55(5):101762. doi: 10.1016/j.cppeds.2025.101762
5. Hughes PR, Lewis MN, Adams SS. Bleeding and Bruising: Primary Care Evaluation. Am Fam Physician. 2024;110(5):504-514.

Comprehensive Care of Patients with Hemostatic Disorders in Family Medicine

Nataša Mrduljaš-Đujić[1], Vedrana Burilović[2], Vanja Viali[3], Milena Kostić[4]

1. Specialist practice in family medicine Postira, Island of Brac.
2. Polyclinic Priska Med, Split
3. Specialist practice in family medicine Split; Department of Family Medicine, Faculty of Medicine, University of Split.
4. Health center "Dr Đorđe Kovačević" Lazarevac, Section of General Practice of Serbian Medical Society.

Keywords: hemostasis, family medicine, coagulation, anticoagulants, antiplatelet therapy.
Correspondence address: Nataša Mrduljaš-Đujić, Polježice 6, 21410 Postira
E-mail: md.natasa@gmail.com
ORCID: Nataša Mrduljaš-Đujić: 0000-0002-0339-4354
Vedrana Burilović: 0009-0004-0689-5666
Vanja Viali https: 0009-0008-9986-7451
Milena Kostić: 0000-0002-4684-284X

Introduction with aim. Hemostasis is a vital physiological process that maintains the balance between bleeding and coagulation and involves a complex interaction among blood vessels, platelets, and plasma coagulation factors. Regulation of these processes is fundamental to the outcome of all diseases and conditions. The aim of this paper is to highlight the complexity of caring for patients with hemostatic disorders in family medicine.

Discussion. The field of hemostasis raises numerous questions related to patient care. Rapid advances, primarily in pharmacotherapy and diagnostics, require continuous updating and expansion of knowledge essential for clinical practice. Current guidelines mainly address the initiation of antiplatelet and anticoagulant therapy, which entails identifying and monitoring high-risk patients (risk factors such as smoking, immobilization, malignancy, use of certain medications, etc.; personal history of thromboembolic events and bleeding tendency; and a positive family history of thrombosis or bleeding). Diagnostic testing is performed according to indication. Basic laboratory investigations include a complete blood count, PT/INR (crucial for monitoring patients on warfarin), aPTT (indicating possible disorders of the intrinsic coagulation pathway, such as factor VIII or IX deficiency), and fibrinogen. In suspected deep vein thrombosis or pulmonary embolism, D-dimer testing is required for confirmation or exclusion, along with appropriate imaging studies (ultrasound, X-ray, CT angiography, etc.), and, when indicated, evaluation for thrombophilia (a condition denoting an increased tendency to form blood clots within blood vessels). Thrombophilia may be acquired—assessed by antithrombin III (activity), protein C and protein S (deficiency may cause thrombosis and may be congenital), homocysteine (elevated levels are associated with increased thrombotic risk), and antiphospholipid antibodies (lupus anticoagulant, anticardiolipin antibodies [IgG and IgM], and beta-2 glycoprotein I antibodies [IgG and IgM])—or inherited, for which genetic testing is performed according to indication. This evaluation is not part of routine practice. Existing chronic diseases affect hemostasis; therefore, it is essential to understand the hemostatic risks they carry (such as liver disease, malignancies, rheumatologic, cardiovascular, psychiatric conditions, etc.). In addition, particular attention is paid to interactions between antiplatelet and anticoagulant medications and other drugs, as well as over-the-counter preparations, in which pharmacists play a very important role in everyday practice. Perioperative (so-called bridging) and postoperative hemostasis-related management are part of contemporary surgical patient care, and patient education is likewise an area to which special attention is devoted. In addition to the above, specific expertise is also required for the care of special patient groups, such as pregnant women and patients with inherited disorders, as well as for the management of their family members. All of the above clearly indicates the necessity of interprofessional collaboration with hospital consultants (hematologists, transfusion medicine specialists, pharmacists, clinical pharmacologists, cardiologists, vascular surgeons, etc.) in the management of hemostatic disorders.

Conclusion. Comprehensive patient care includes family physicians' knowledge of the patient and understanding of their disease and health indicators. Likewise, for earlier recognition and more effective treatment of hemostatic disorders, teamwork, reflected in collaboration between family physicians and hospital consultants, is of particular importance. Therefore, it is essential to include family physicians in teams providing personalized care, especially for complex, multimorbid patients.

REFERENCES:

1. Ho KH, van Hove M, Leng G. Trends in anticoagulant prescribing: a review of local policies in English primary care. BMC Health Serv Res. 2020;20:279. doi: 10.1186/s12913-020-5058-1.
2. Dejhalla E, Zavidić T. Primjena varfarina i novih oralnih antikoagulansa u odabranim ordinacijama obiteljske medicine - je li cijena to što nas ograničava? Med Fam Croat, Vol 29, No1-2, 2021str.15-21.
3. Deng Y, Tong Y, Deng Y, Zou L, Li S, Chen H. Non-vitamin K antagonist oral anticoagulants versus warfarin in patients with cancer and atrial fibrillation: a systematic review and meta-analysis. J Am Heart Assoc. 2019;8:e012540. doi: 10.1161/JAHA.119.012540.
4. Todd KE Jr. Hemostasis in primary care: A primer. Curr Probl Pediatr Adolesc Health Care. 2025;55(5):101762. doi: 10.1016/j.cppeds.2025.101762
5. Hughes PR, Lewis MN, Adams SS. Bleeding and Bruising: Primary Care Evaluation. Am Fam Physician. 2024;110(5):504-514.

Racionalni pristup dijagnostici i liječenju nasljednih trombofilija

Vedrana Burilović[1], Nataša Mrduljaš-Đujić[2], Marija Ruševljan Jurić[3], Tina Novaković[4]

1. Poliklinika Priska Med, Split
2. Specijalistička ordinacija obiteljske medicine Postira, Otok Brač.
3. Opća Bolnica "Dr. Ivo Pedišić", Sisak.
4. Univerzitetski Klinički Centar Srbije, Beograd

Ključne riječi: Nasljedna trombofilija, Genetsko testiranje, Dijagnostika, Antikoagulantna terapija, Venski tromboembolizam
Adresa za dopisivanje: Vedrana Burilović, Vidilica 8, 21000 Split
E adresa: vedrana.burilovic@gmail.com
ORCID: Vedrana Burilović: 0009-0004-0689-5666
Nataša Mrduljaš-Đujić: 0000-0002-0339-4354
Marija Ruševljan Jurić: 0009-0007-6441-8739
Tina Novaković: 0009-0002-4658-6425

Uvod s ciljem. Nasljedne trombofilije predstavljaju heterogenu skupinu genetski uvjetovanih poremećaja hemostaze povezanih s povećanom sklonošću razvoju venske tromboembolije (VTE). Iako je dijagnostičko testiranje danas široko dostupno a VTE stanje koje je potencijalno životno ugrožavajuće te po učestalosti i značaju ide uz bok s infarktom miokarda i moždanim udarom, o VTE se nedovolno govori i misli. U kliničkoj praksi dijagnostičko testiranje često nije dovoljno selektivno niti dosljedno utemeljeno na suvremenim smjernicama što može rezultirati pretjeranim testiranjem, pogrešnom interpretacijom nalaza te lošim odlukama o dužini i načinu liječenja. Cilj ovog rada je kritički sagledati dijagnostičku i terapijsku vrijednost testiranja na nasljedne trombofilije u svjetlu dostupnih dokaza, pri tome pazeći na individualan i racionalan pristup svakom bolesniku glede liječenja i ishoda bolesti.

Rasprava. U radu se razmatraju najčešći oblici nasljednih trombofilija – od onih visokog rizika do srednjeg i niskog. Mutacije visokog rizika su faktor V Leiden, mutacija protrombina G20210A te deficit prirodnih antikoagulansa (antitrombina, proteina C i S). Analizira se njihova učestalost u populaciji, relativni rizik za nastanak tromboze i raznolika klinička ekspresija, uz poseban osvrt na rezultate epidemioloških istraživanja naše populacije. Posebna pažnja posvećena je jasno definiranim indikacijama za testiranje, uključujući prvu epizodu venske tromboembolije u mlađoj životnoj dobi, pozitivnu obiteljsku anamnezu, tromboze atipičnih lokalizacija te specifične kliničke situacije koje uz nasljedne trombofilije doprinose nastanku VTE (trudnoća, trauma, nedavna operacija, boravak u bolnici, autoimune bolesti, aktivni tumori, kemoterapija, hormonsko nadomjesno liječenje, srčano zatajenje, debljina, starija životna dob, zarazne bolesti). Usporedbom postojećih smjernica uočavaju se nedosljednosti i nedostatak standardizacije, kao i ograničeni dokazi o utjecaju pojedinih trombofilija na dugoročni i ponavljajući trombotski rizik, posebice odluke o trajanju, vrsti i dozi antikoagulantne terapije. Stoga je poseban naglasak na individualnom dijagnostičkom, profilaktičkom i terapijskom pristupu svakom bolesniku uzimajući u obzir dostupne sve anamnestičke, laboratorijske i kliničke podatke.

Zaključak. Dijagnostika nasljednih trombofilija ima ograničenu, ali jasno definiranu i nedovoljno iskorištenu ulogu u suvremenoj kliničkoj praksi. Selektivan pristup testiranju, uz pažljivu interpretaciju svih dostupnih nalaza te njihovo uklapanje s kliničkom slikom, omogućuje precizniju procjenu trombotskog rizika i racionalnije terapijske odluke. Spoj znanstvenih dokaza, smjernica, kliničke prosudbe i individualnog pristupa svakom bolesniku ostaje temelj optimalnog zbrinjavanja bolesnika i smislenog korištenja dijagnostičkih i terapijskih mogućnosti.

LITERATURA:

1. Tang LV, Morange PE, Corral J, Ntaios G, Spyropoulos AC, Lip GYH, Douketis JD; International Thrombophilia Collaborative Initiative. Practical guideline for major hereditary thrombophilia. Innovation (Camb). 2025 Apr 1;6(6):100890. doi: 10.1016/j.xinn.2025.100890. PMID: 40528894; PMCID: PMC12169261.
2. Middeldorp S, Nieuwlaat R, Baumann Kreuziger L, Coppens M, Houghton D, James AH, Lang E, Moll S, Myers T, Bhatt M, Chai-Adisaksopha C, Colunga-Lozano LE, Karam SG, Zhang Y, Wiercioch W, Schünemann HJ, Iorio A. American Society of Hematology 2023 guidelines for management of venous thromboembolism: thrombophilia testing. Blood Adv. 2023 Nov 28;7(22):7101-7138. doi: 10.1182/bloodadvances.2023010177. PMID: 37195076; PMCID: PMC10709681.
3. Vrotniakaite-Bajerciene K, Angelillo-Scherrer A, Castellucci LA. Thrombophilia Testing in Venous Thromboembolism. Med Clin North Am. 2025 Jul;109(4):907-921. doi: 10.1016/j.mcna.2025.01.008. Epub 2025 Apr 12. PMID: 40500088.
4. Asmis L, Hellstern P. Thrombophilia Testing - a Systematic Review. Clin Lab. 2023 Apr 1;69(4). doi: 10.7754/Clin.Lab.2022.220817. PMID: 37057948.
5. Khider L, Gendron N, Mauge L. Inherited Thrombophilia in the Era of Direct Oral Anticoagulants. Int J Mol Sci. 2022 Feb 5;23(3):1821. doi: 10.3390/ijms23031821. PMID: 35163742; PMCID: PMC8837096.

Rational Approach to the Diagnosis and Treatment of Hereditary Thrombophilia

Vedrana Burilović[1], Nataša Mrduljaš-Đujić[2], Marija Ruševljan Jurić[3], Tina Novaković[4]

1. Priska Med Polyclinic, Split
2. Specialist Family Medicine Practice Postira, Island Brač
3. General Hospital "Dr. Ivo Pedišić", Sisak
4. University Clinical Center of Serbia, Belgrade

Keywords: Hereditary thrombophilia, Genetic testing, Diagnostics, Anticoagulant therapy, Venous thromboembolism
Correspondence address: Vedrana Burilović, Vidilica 8, 21000 Split
E-mail: vedrana.burilovic@gmail.com
ORCID: Vedrana Burilović: 0009-0004-0689-5666
Nataša Mrduljaš-Đujić: 0000-0002-0339-4354
Marija Ruševljan Jurić: 0009-0007-6441-8739
Tina Novaković: 0009-0002-4658-6425

Introduction with Aim. Hereditary thrombophilias represent a heterogeneous group of genetically determined disorders of hemostasis associated with an increased tendency toward the development of venous thromboembolism (VTE). Although diagnostic testing is now widely available and VTE is a potentially life-threatening condition that, in terms of incidence and clinical importance, stands alongside myocardial infarction and stroke, VTE remains insufficiently discussed and considered. In clinical practice, diagnostic testing is often not sufficiently selective nor consistently based on contemporary guidelines, which may result in excessive testing, misinterpretation of findings, and poor decisions regarding the duration and modality of treatment. The aim of this paper is to critically evaluate the diagnostic and therapeutic value of testing for hereditary thrombophilia in light of available evidence, while emphasizing an individualized and rational approach to each patient with regard to treatment and disease outcomes.

Discussion. In this paper, the most common forms of hereditary thrombophilia are discussed—ranging from high-risk to moderate- and low-risk conditions. High-risk mutations include factor V Leiden, the prothrombin G20210A mutation, and deficiencies of natural anticoagulants (antithrombin, protein C, and protein S). Their prevalence in the population, relative risk for thrombosis, and diverse clinical expression are analyzed, with particular emphasis on the results of epidemiological studies in our population. Special attention is devoted to clearly defined indications for testing, including a first episode of venous thromboembolism at a younger age, a positive family history, thrombosis at atypical sites, and specific clinical situations that, in combination with hereditary thrombophilia, contribute to the development of VTE (pregnancy, trauma, recent surgery, hospitalization, autoimmune diseases, active malignancy, chemotherapy, hormone replacement therapy, heart failure, obesity, advanced age, infectious diseases). A comparison of existing guidelines reveals inconsistencies and a lack of standardization, as well as limited evidence regarding the impact of individual thrombophilias on long-term and recurrent thrombotic risk, particularly in decisions concerning the duration, type, and dose of anticoagulant therapy. Therefore, special emphasis is placed on an individualized diagnostic, prophylactic, and therapeutic approach to each patient, taking into account all available anamnestic, laboratory, and clinical data.

Conclusion. The diagnosis of hereditary thrombophilia has a limited but clearly defined and insufficiently utilized role in contemporary clinical practice. A selective approach to testing, combined with careful interpretation of all available findings and their integration with the clinical presentation, allows for more precise assessment of thrombotic risk and more rational therapeutic decisions. The integration of scientific evidence, guidelines, clinical judgment, and an individualized approach to each patient remains the foundation of optimal patient management and the meaningful use of diagnostic and therapeutic options.

REFERENCES:

1. Tang LV, Morange PE, Corral J, Ntaios G, Spyropoulos AC, Lip GYH, Douketis JD; International Thrombophilia Collaborative Initiative. Practical guideline for major hereditary thrombophilia. Innovation (Camb). 2025 Apr 1;6(6):100890. doi: 10.1016/j.xinn.2025.100890. PMID: 40528894; PMCID: PMC12169261.
2. Middeldorp S, Nieuwlaat R, Baumann Kreuziger L, Coppens M, Houghton D, James AH, Lang E, Moll S, Myers T, Bhatt M, Chai-Adisaksopha C, Colunga-Lozano LE, Karam SG, Zhang Y, Wiercioch W, Schünemann HJ, Iorio A. American Society of Hematology 2023 guidelines for management of venous thromboembolism: thrombophilia testing. Blood Adv. 2023 Nov 28;7(22):7101-7138. doi: 10.1182/bloodadvances.2023010177. PMID: 37195076; PMCID: PMC10709681.
3. Vrotniakaite-Bajerciene K, Angelillo-Scherrer A, Castellucci LA. Thrombophilia Testing in Venous Thromboembolism. Med Clin North Am. 2025 Jul;109(4):907-921. doi: 10.1016/j.mcna.2025.01.008. Epub 2025 Apr 12. PMID: 40500088.
4. Asmis L, Hellstern P. Thrombophilia Testing - a Systematic Review. Clin Lab. 2023 Apr 1;69(4). doi: 10.7754/Clin.Lab.2022.220817. PMID: 37057948.
5. Khider L, Gendron N, Mauge L. Inherited Thrombophilia in the Era of Direct Oral Anticoagulants. Int J Mol Sci. 2022 Feb 5;23(3):1821. doi: 10.3390/ijms23031821. PMID: 35163742; PMCID: PMC8837096.

Racionalni pristup dijagnostici i liječenju stečenih trombofilija

Juraj Jug[1]

1. Dom zdravlja Zagreb – Zapad

Ključne riječi: antikoagulantna terapija, sistemski eritematozni lupus, stečene trombofilije, venska tromboembolija
Adresa za dopisivanje: Krapinska 45, Zagreb, Hrvatska
E adresa: juraj2304@gmail.com
ORCID: 0000-0002-3189-1518

Uvod s ciljem: Stečene trombofilije (ST) nastaju interakcijom brojnih čimbenika rizika kojom nastaju uvjeti za pojačano zgrušavanje krvi (tzv. Virchowljeve trijade = ozljeda ili aktivacija endotela, smanjeni protok krvi i hiperkoaguabilno stanje). Dob, pretilost, pušenje, imobilizacija, trauma, oralni kontraceptivi i trudnoća najčešći su čimbenici rizika povezani sa ST. Osim kod navedenih, pojačana hemostaza javlja se i kod malignih bolesti, antifosfolipidnog (aPL) sindroma, sistemskog eritematoznog lupusa (SLE), sepse, policitemija, nefrotskog sindroma i dr. Cilj ovog rada je analizirati racionalni dijagnostički i terapijski pristup ST.

Rasprava: Najviši rizik (čak do 10x veći prije i do 35x veći rizik nakon porođaja) od nastanka ST imaju pretile trudnice multipare starije od 40 godina. Nastanak venske tromboembolije (VTE) u ovom slučaju ne predstavlja indikaciju za dodatnom dijagnostičkom obradom. U slučaju tri i više neobjašnjivih pobačaja, žena ima indikaciju za testiranje na antifosfolipidni sindrom. Ne postoje jasni dokazi da testiranje na trombofilije bilo kojeg uzroka mogu spriječiti nastanak prve epizode VTE, a preventivna upotreba Aspirina 100 mg dnevno predmet je i dalje kontroverzna. Prema novim istraživanjima, uzimanje Aspirina (osim u bolesnika s raširenom aterosklerozom) može spriječiti ponavljanje VTE za 32% uz nizak rizik od krvarenja. Ipak, ako do njega dođe, prevencija ponavljanja VTE moguća je samo uz doživotno uzimanje antikoagulantne terapije (AKT). Svim osobama s višestrukim čimbenicima rizika savjetuje se modifikacija životnog stila u cilju njihovog uklanjanja te odgovarajuća AKT u specifičnim situacijama (visoka trudnoća, imobilizacija, duga putovanja i sl.). Ovisno o uzroku, u slučaju nastanka VTE, AKT se oboljelima savjetuje u trajanju od 6 do 12 mjeseci. Istraživanja pokazuju da ponovljeni VTE nastaju u oko 50% slučajeva nakon završetka AKT-e, najčešće u muškaraca, starijih, pretilih, te osoba s povišenim hematokritom i albuminurijom. Vrijednosti D-dimera nakon završetka AKT-e mogu pomoći u prepoznavanju visokorizičnih pacijenata za nastanak ponovljene VTE. Danas se koriste svi dostupni direktni oralni antikoagulansi (DOAK, dabigatran, rivaroksaban, apiksaban i edoksaban) s kojima bolesnik ima manji rizik krvarenja i manje interakcija s drugim lijekovima od varfarina. Međutim, DOAK nisu indicirani u osoba s dokazanim lupus antikoagulansom (LAC), aPL, antikardiolipinskim (ACA), anti beta-2 glikoprotein I protutijelima (anti-β2-GPI), već samo varfarin. U trudnica s pozitivnim protutijelima nužna je profilaksa heparinom. Oboljelima od SLE potrebno je odrediti navedena protutijela u cilju izračuna rizika od VTE, no u čak 40% slučajeva, VTE se iz nejasnih razloga pojavljuje uz negativan nalaz. Heparinom inducirana trombocitopenija (HIT) nastaje u 5% liječenih, neovisno o dozi i trajanju terapije. Diseminirana intravaskularna koagulacija (DIK) nastaje u sepsi (50%), nakon traume (30%) i oboljelih od malignih bolesti (20%) te je životno ugrožavajuće stanje s visokom stopom smrtnosti.

Zaključak: Racionalna dijagnostika i liječenje ST temelje se na prepoznavanju čimbenika rizika i izračunu šanse za razvoj VTE u pojedinog bolesnika. Testiranje na stečena protutijela LAC, aPL, ACA, anti-β2-GPI i dr. indicirano je samo u oboljelih od SLE te trudnica s tri i više neobjašnjivih pobačaja. Mršavljenje, prestanak pušenja i kretanje treba poticati kod svih osoba, a prevencija Aspirinom i dalje ostaje kontroverzna, dok oboljele, u slučaju pojave VTE, treba liječiti odgovarajućom vrstom i dozom AKT.

LITERATURA:

1. Colucci G, Tsakiris DA. Thrombophilia screening: universal, selected, or neither? Clinical and applied thrombosis/hemostasis. 2017;23(8):893-9. doi.org/10.1177/1076029616683803
2. Prandoni P, Barbar S, Milan M, Vedovetto V, Pesavento R. The risk of recurrent thromboembolic disorders in patients with unprovoked venous thromboembolism: new scenarios and opportunities. Eur J Intern Med. 2014;25(1):25-30. doi: 10.1016/j.ejim.2013.09.005.
3. Warkentin AE, Donadini MP, Spencer FA, Lim W, Crowther M. Bleeding risk in randomized controlled trials comparing warfarin and aspirin: a systematic review and meta-analysis. J Thromb Haemost. 2012;10(4):512-20. doi: 10.1111/j.1538-7836.2012.04635.x.
4. Al-Homood IA. Thrombosis in systemic lupus erythematosus: a review article. ISRN Rheumatol. 2012;2012:428269. doi: 10.5402/2012/428269.
5. Nicolas D, Nicolas S, Hodgens A, et al. Heparin-Induced Thrombocytopenia. [Updated 2023 May 16]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK482330/

Rational approach to diagnosis and treatment of acquired thrombophilia

Juraj Jug[1]

1. Health center Zagreb – West

Keywords: anticoagulant therapy, systemic erythematous lupus, acquired thrombophilia, venous thromboembolism
Correspondence address: Krapinska 45, Zagreb, Hrvatska
E-mail: juraj2304@gmail.com
ORCID: 0000-0002-3189-1518

Introduction with aim: Acquired thrombophilia (AT) results from the interaction of multiple risk factors that create conditions for increased blood clotting (so-called Virchow's triad = endothelial injury or activation, reduced blood flow, and a hypercoagulable state). Age, obesity, smoking, immobilization, trauma, oral contraceptives, and pregnancy are the most common risk factors associated with AT. In addition, increased hemostasis also occurs in malignant diseases, antiphospholipid (aPL) syndrome, systemic lupus erythematosthe diagnosisus (SLE), sepsis, polycythemia, nephrotic syndrome, etc. This paper aims to analyze a rational diagnostic and therapeutic approach to AT.

Discussion: The highest risk (up to 10x higher before and up to 35x higher risk after delivery) of developing AT is for obese multiparous pregnant women over 40 years old. The occurrence of venous thromboembolism (VTE) in this case does not warrant additional diagnostic testing. In the case of three or more unexplained miscarriages, the woman indicates antiphospholipid syndrome testing. There is no clear evidence that testing for thrombophilia of any cause can prevent the occurrence of the first episode of VTE, and the preventive use of Aspirin 100 mg daily is still controversial. According to new research, taking Aspirin (except in patients with widespread atherosclerosis) can prevent recurrence of VTE by 32% with a low risk of bleeding. However, if it occurs, prevention of VTE recurrence is only possible with lifelong anticoagulation therapy (ACT). All patients with multiple risk factors are advised to modify their lifestyle to remove them, and to take appropriate action in specific situations (heavy pregnancy, immobilization, long trips, etc.). Depending on the cause, in the case of VTE, ACT is advised to patients for a period of 6 to 12 months. Research shows that repeated VTE occurs in about 50% of cases after the end of ACT, most often in men, the elderly, obese, and patients with elevated hematocrit and albuminuria. D-dimer values after completion of ACT may help identify high-risk patients for recurrent VTE. Today, all available direct oral anticoagulants (DOACs, dabigatran, rivaroxaban, apixaban, and edoxaban) are used, leading to a lower risk of bleeding and fewer drug-drug interactions than warfarin. However, DOACs are not indicated in patients with proven lupus anticoagulant (LAC), aPL, anticardiolipin (ACA), anti-beta-2 glycoprotein I antibodies (anti-β2-GPI), but only warfarin. Heparin prophylaxis is necessary in pregnant women with positive antibodies. SLE patients need to determine the mentioned antibodies to calculate the risk of VTE, but in as many as 40% of cases, VTE occurs for unclear reasons with a negative result. Heparin-induced thrombocytopenia (HIT) occurs in 5% of those treated, regardless of the dose and duration of therapy. Disseminated intravascular coagulation (DIC) occurs in sepsis (50%), after trauma (30%), and in patients with malignant diseases (20%) and is a life-threatening condition with a high mortality rate.

Conclusion: Rational diagnostics and treatment of AT are based on the recognition of risk factors and calculation of the individual chance of developing VTE. Testing for acquired antibodies LAC, aPL, ACA, anti-β2-GPI, etc., is indicated only in patients with SLE and pregnant women with three or more unexplained miscarriages. Weight loss, smoking cessation, and exercise should be encouraged in all individuals, and prevention with Aspirin remains controversial, although patients, in the event of VTE, should be treated with the appropriate type and dose of ACT.

REFERENCES:

1. Colucci G, Tsakiris DA. Thrombophilia screening: universal, selected, or neither? Clinical and applied thrombosis/hemostasis. 2017;23(8):893-9. doi.org/10.1177/1076029616683803
2. Prandoni P, Barbar S, Milan M, Vedovetto V, Pesavento R. The risk of recurrent thromboembolic disorders in patients with unprovoked venous thromboembolism: new scenarios and opportunities. Eur J Intern Med. 2014;25(1):25-30. doi: 10.1016/j.ejim.2013.09.005.
3. Warkentin AE, Donadini MP, Spencer FA, Lim W, Crowther M. Bleeding risk in randomized controlled trials comparing warfarin and aspirin: a systematic review and meta-analysis. J Thromb Haemost. 2012;10(4):512-20. doi: 10.1111/j.1538-7836.2012.04635.x.
4. Al-Homood IA. Thrombosis in systemic lupus erythematosus: a review article. ISRN Rheumatol. 2012;2012:428269. doi: 10.5402/2012/428269.
5. Nicolas D, Nicolas S, Hodgens A, et al. Heparin-Induced Thrombocytopenia. [Updated 2023 May 16]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK482330/

Lijekovi i poremećaji hemostaze. Interakcije lijekova važne za praksu

Zagorka Blagojević Pavlović[1]

1. Dom zdravlja Doboj, Bosna i Hercegovina

Ključne riječi: poremećaji hemostaze, antikoagulansi, doac, interakcije lijekova, obiteljska medicina
Adresa za dopisivanje: Karađorđeva 62, 74 000 Doboj, BiH
E adresa: zagorka.pavlovic@domzdravljadoboj.ba
ORCID: 0009-0003-4275-0141

Uvod s ciljem: Liječenje pacijenata s poremećajima hemostaze predstavlja jedan od najsloženijih zadataka u praksi liječnika obiteljske medicine. Razlog tome je uski terapijski raspon antikoagulantnih lijekova i visok rizik od klinički značajnih interakcija koje mogu dovesti do krvarenja, tromboze ili terapijskog neuspjeha. Uz polifarmaciju, komorbiditete i sve većom dobi pacijenata pravilan menadžment pacijenata sa poremećajima hemostaze postaje sve izazovniji. Cilj ovog rada je sistematizirati ključne interakcije antikoagulantne i antitrombocite terapije s lijekovima koji se najčešće propisuju u praksi liječnika obiteljske medicine, poput antibiotika, analgetika i dodataka prehrani.

Rasprava: Proveden je pregled relevantne literature i važećih kliničkih smjernica za primjenu antagonista vitamina K (varfarin) i direktnih oralnih antikoagulanasa (doac). Najveći broj interakcija je zabilježen kod varfarina, dok kod DOAC-a interakcije su rjeđe ali potencijalno kritične prilikom istovremene primjene sa nekim drugim lijekovima. Poseban rizik u obiteljskoj medicini predstavlja nekontrolirana upotreba nesteroidnih inflamatornih lijekova i aspirina, koji sinergijski povećavaju rizik od gastrointestinalnih krvarenja u svim skupinama antikoagulanasa.

Zaključak: Sigurnost pacijenata s poremećajima hemostaze direktno ovisi o poznavanju interakcija lijekova od strane ljekara obiteljske medicine. Neophodan je kontinuirani monitoring, naročito kod upotrebe varfarina, edukacija pacijenata o interakciji lijekova s hranom te o samoinicijativnom istovremenom uzimanju drugih lijekova ili pripravaka, te prilagođavanje doze DOAC-a prema funkciji bubrega i pridruženoj terapiji kako bi se minimizirali jatrogeni rizici.

LITERATURA:

1. LaPelusa A, Dave HD. Physiology, Hemostasis. [Updated 2023 May 1]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 [cited 2026 Feb 15]. Available from: https://www.ncbi.nlm.nih.gov/books/NBK545263/
2. Carpenter M, Berry H, Pelletier AL. Clinically Relevant Drug-Drug Interactions in Primary Care. Am Fam Physician. 2019 May 1;99(9):558-564.
3. Almarshad F, Alaklabi A, Bakhsh E, Pathan A, Almegren M. Use of direct oral anticoagulants in daily practice. Am J Blood Res. 2018 Dec 10;8(4):57-72.
4. Nicolaides AN, Fareed J, Spyropoulos AC, Kakkar RHL, Antignani PL, et.al. Prevention and management of venous thromboembolism. International Consensus Statement. Guidelines according to scientific evidence. Int Angiol. 2024 Feb;43(1):1-222. doi: 10.23736/S0392-9590.23.05177-5.
5. AMNSLD. Vodic tromboprofilaksa i lecenje. [Internet]. Belgrade: AMNSLD; 2025 [cited 2026 Feb 15]. Available from: http://amnsld.in.rs/wp-content/uploads/2025/07/Vodic_Tromboprofilaksa-i-lecenje-.pdf

Drugs and hemostasis disorders. Drug interactions important for family medicine practice

Zagorka Blagojević Pavlović[1]

1. Dom zdravlja Doboj, Bosna i Hercegovina

Keywords: hemostasis disorders, anticoagulants, doac, drug interactions, family medicine
Correspondence address: Karađorđeva 62, 74 000 Doboj, BiH
E-mail: zagorka.pavlovic@domzdravljadoboj.ba
ORCID: 0009-0003-4275-0141

Introduction with objective: Management of patients with hemostasis disorders is one of the most complex tasks in family medicine practice. Reason for this is narrow therapeutic range of anticoagulant drugs and the high risk of clinically significant interactions that can lead to bleeding, thrombosis or therapeutic failure. Polypharmacy, comorbidities and the increasing age of patients are contributing to making proper management of patients with hemostasis disorders more and more challenging. The objective of this paper is to systematize the key interactions of anticoagulant and antiplatelet therapy with drugs that are most often prescribed in family medicine practice, such as antibiotics, analgesics and nutritional supplements.

Discussion: A review of the relevant literature and valid clinical guidelines for the use of vitamin K antagonists (warfarin) and direct oral anticoagulants (DOAC) was performed. The largest number of interactions was recorded with warfarin, while with DOAC interactions are less frequent but potentially critical when used simultaneously with some other drugs. A special risk in family medicine practice is the use of nonsteroidal inflammatory drugs and aspirin, which synergistically increase the risk of gastrointestinal bleeding in all groups of anticoagulants.

Conclusion: The safety of patients with hemostasis disorders directly depends on the family physician's knowledge of drug interactions. Continuous monitoring is necessary especially when using warfarin, education of patients about drug interactions with food, drug interactions with self-initiated simultaneous taking of OTC drugs and adjustment of the dose of DOAC according to kidney function and associated therapy in order to minimize iatrogenic risks.

REFERENCES:

1. LaPelusa A, Dave HD. Physiology, Hemostasis. [Updated 2023 May 1]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 [cited 2026 Feb 15]. Available from: https://www.ncbi.nlm.nih.gov/books/NBK545263/
2. Carpenter M, Berry H, Pelletier AL. Clinically Relevant Drug-Drug Interactions in Primary Care. Am Fam Physician. 2019 May 1;99(9):558-564.
3. Almarshad F, Alaklabi A, Bakhsh E, Pathan A, Almegren M. Use of direct oral anticoagulants in daily practice. Am J Blood Res. 2018 Dec 10;8(4):57-72.
4. Nicolaides AN, Fareed J, Spyropoulos AC, Kakkar RHL, Antignani PL, et.al. Prevention and management of venous thromboembolism. International Consensus Statement. Guidelines according to scientific evidence. Int Angiol. 2024 Feb;43(1):1-222. doi: 10.23736/S0392-9590.23.05177-5.
5. AMNSLD. Vodic tromboprofilaksa i lecenje. [Internet]. Belgrade: AMNSLD; 2025 [cited 2026 Feb 15]. Available from: http://amnsld.in.rs/wp-content/uploads/2025/07/Vodic_Tromboprofilaksa-i-lecenje-.pdf

Guidelines - mindlines u praksi poremećaja hemostaze: primjeri iz obiteljske medicine

Tina Zavidić[1,2]

1. Istarski domovi zdravlja, Pazin
2. Sveučilište u Rijeci, Medicinski fakultet, Katedra za obiteljsku medicinu

Ključne riječi: poremećaji hemostaze, trombofilija, kliničko odlučivanje, smjernice u praksi
Adresa za dopisivanje: B. Branchetta 20, 51000 Rijeka
E adresa: dr.zavidic@gmail.com
ORCID: 0000-0002-5365-0002

Uvod s ciljem. Poremećaji hemostaze čest su i klinički zahtjevan problem u praksi obiteljskog liječnika, osobito zbog sve češće primjene antikoagulantne i antiagregacijske terapije te multimorbiditeta. Iako postoje kliničke smjernice za dijagnostiku i liječenje poremećaja krvarenja i tromboze, njihova je primjena u svakodnevnoj praksi otežana zbog ograničenog vremena, složenosti preporuka i potrebe za individualiziranim pristupom bolesniku. U takvim okolnostima kliničko se odlučivanje oslanja na mindlines - iskustvom oblikovane obrasce razmišljanja koji integriraju smjernice, osobno iskustvo i kontekst prakse. Cilj rada je prikazati izazove kliničkog odlučivanja u obiteljskoj medicini kroz slučajeve poremećaja hemostaze i istaknuti potrebu za integracijom smjernica i individualne procjene bolesnika.

Prikazi slučaja. U radu su prikazana tri prikaza slučaja iz obiteljske medicine koji pokazuju različite aspekte poremećaja hemostaze i izazove kliničkog odlučivanja. Mlada bolesnica u dobi od 28 godina javila se liječniku zbog učestalih epistaksi, produženih menstruacija i nastajanja modrica, uz pozitivnu obiteljsku anamnezu jakih menstrualnih krvarenja. Na temelju anamneze i kliničke slike postavljena je sumnja na nasljedni poremećaj hemostaze te je bolesnica upućena na daljnju hematološku obradu. U drugom slučaju, muškarac u dobi od 62 godine razvio je duboku vensku trombozu nakon operacije koljena, kao prvu epizodu s jasno provocirajućim čimbenikom. Unatoč želji bolesnika za trombofilijskom obradom, liječnik se vodio važećim smjernicama koje ne preporučuju dodatnu dijagnostiku te je započeo standardnu antikoagulantnu terapiju uz edukaciju bolesnika. Treći slučaj odnosi se na muškarca u dobi od 78 godina na terapiji rivaroksabanom, kod kojeg su se razvile epistakse i makrohematurija. Daljnjom obradom utvrđena je kronična bubrežna bolest stadij 3b (eGFR 38 ml/min), te je neadekvatna doza antikoagulantne terapije prilagođena stupnju bubrežnog oštećenja. Ovi primjeri ističu važnost integracije kliničkih smjernica s individualnom procjenom u primarnoj zdravstvenoj zaštiti.

Rasprava. Poremećaji hemostaze u obiteljskoj medicini predstavljaju izazov zbog različitih kliničkih prezentacija, čestih komorbiditeta te sve većeg broja smjernica koje se često mijenjaju. Iako smjernice temeljene na dokazima pružaju okvir za dijagnostiku i terapiju, njihova primjena u praksi ograničena je vremenskim pritiskom, složenim preporukama i individualnim karakteristikama bolesnika. U tom kontekstu, koncept „mindlines“ - internaliziranih, iskustvom oblikovanih i kolektivno dijeljenih znanja – ima značajnu ulogu u donošenju kliničkih odlukaKod procjene krvarenja, tromboembolijskog rizika te vođenja antikoagulantne terapije, liječnici obiteljske medicine često integriraju smjernice s vlastitim iskustvom, dostupnošću dijagnostike i preferencijama bolesnika. Takav pristup omogućuje fleksibilnost i individualizaciju skrbi, ali istovremeno nosi rizik odstupanja od aktualnih preporuka. Za buduća istraživanja i klinički pristup potrebno je razvijati smjernice prilagođene primarnoj zdravstvenoj zaštiti, s naglaskom na jednostavne, primjenjive algoritme i edukacijske modele koji olakšavaju integraciju guidelines i mindlines. Time bi se unaprijedila sigurnost bolesnika, dosljednost skrbi i kvalitetu zbrinjavanja poremećaja hemostaze. Obiteljski liječnik ima ključnu ulogu u prilagodbi terapije pojedincu, uz stalnu procjenu rizika i koristi.

Zaključak. Praćenje i liječenje poremećaja hemostaze u obiteljskoj medicini zahtijeva uravnotežen pristup koji povezuje smjernice temeljene na dokazima s kliničkim „mindlines“ oblikovanim iskustvom i kontekstom prakse. Kvalitetna skrb zahtijeva ravnotežu između adherencije smjernicama i fleksibilnosti iz iskustva. Razvoj praktičnih, jasno strukturiranih i dostupnih smjernica, uz poticanje reflektivne kliničke prakse, ključan je za optimalno zbrinjavanje bolesnika u primarnoj zdravstvenoj zaštiti.

LITERATURA:

1. Samur BM, Samur TG, Çiflikli FE, i sur. Evaluation of primary care physicians' approaches to hemophilia and bleeding disorders: a questionnaire survey. Blood Coagul Fibrinolysis. 2022;33(7):381-388. doi: 10.1097/MBC.0000000000001152.
2. Tiede A, Susen S, Lisman T. Acquired bleeding disorders. Haemophilia. 2024;30 Suppl 3:29-38. Afrikaans. doi: 10.1111/hae.14995.
3. Peyvandi F, Klamroth R, Carcao M, i sur. Management of bleeding disorders in adults. Haemophilia. 2012;18 Suppl 2:24-36. doi: 10.1111/j.1365-2516.2012.02797.x.
4. Weyand AC, Flood VH. Von Willebrand Disease: Current Status of Diagnosis and Management. Hematol Oncol Clin North Am. 2021 Dec;35(6):1085-1101. doi: 10.1016/j.hoc.2021.07.004.
5. Simon SJ, Patell R, Zwicker JI, i sur. Venous Thromboembolism in Total Hip and Total Knee Arthroplasty. JAMA Netw Open. 2023;6(12):e2345883. doi: 10.1001/jamanetworkopen.2023.45883.

Guidelines – mindlines in the practice of hemostasis disorders: examples from family medicine

Tina Zavidić[1,2]

1. Istrian Health Centers, Pazin
2. University of Rijeka, Faculty of Medicine, Department of Family Medicine

Keywords: hemostasis disorders, thrombophilia, clinical decision-making, practice guidelines
Correspondence address: B. Branchetta 20, 51000 Rijeka
E-mail: dr.zavidic@gmail.com
ORCID: 0000-0002-5365-0002

Introduction with Aim. Hemostasis disorders are a common and clinically challenging problem in family medicine practice, particularly due to the increasing use of anticoagulant and antiplatelet therapy and the growing prevalence of multimorbidity. Although clinical guidelines for the diagnosis and management of bleeding and thrombotic disorders are available, their application in everyday practice is often hindered by time constraints, the complexity of recommendations, and the need for an individualized approach to the patient. In such circumstances, clinical decision-making frequently relies on mindlines - experience-based cognitive frameworks that integrate guidelines, personal clinical experience, and the context of practice.

The aim of this paper is to present the challenges of clinical decision-making in family medicine through cases of hemostasis disorders and to emphasize the need for integrating clinical guidelines with individualized patient assessment.

Case Presentations. This paper presents three case reports from family medicine practice illustrating different aspects of hemostasis disorders and the challenges of clinical decision-making. A 28-year-old woman presented with recurrent epistaxis, prolonged menstrual bleeding, and easy bruising, along with a positive family history of heavy menstrual bleeding. Based on the medical history and clinical presentation, a hereditary hemostasis disorder was suspected, and the patient was referred for further hematological evaluation. In the second case, a 62-year-old man developed deep vein thrombosis following knee surgery as a first episode with a clearly identifiable provoking factor. Despite the patient's request for thrombophilia testing, the physician adhered to current clinical guidelines, which do not recommend additional diagnostic workup in such cases, and initiated standard anticoagulant therapy accompanied by patient education. The third case involves a 78-year-old man receiving rivaroxaban therapy who developed epistaxis and macroscopic hematuria. Further evaluation revealed stage 3b chronic kidney disease (eGFR 38 mL/min), and the inappropriate anticoagulant dose was adjusted according to the degree of renal impairment. These cases highlight the importance of integrating clinical guidelines with individualized patient assessment in primary health care.

Discussion. Hemostasis disorders in family medicine present a significant challenge due to their diverse clinical presentations, frequent comorbidities, and the growing number of clinical guidelines that are frequently updated. Although evidence-based guidelines provide a framework for diagnosis and management, their application in everyday practice is limited by time constraints, complex recommendations, and individual patient characteristics. In this context, the concept of mindlines - internalized, experience-based, and collectively shared knowledge—plays an important role in clinical decision-making. When assessing bleeding, thromboembolic risk, and managing anticoagulant therapy, family physicians often integrate clinical guidelines with their own experience, the availability of diagnostic resources, and patient preferences. This approach allows flexibility and individualized care but simultaneously carries the risk of deviation from current recommendations. For future research and clinical practice, there is a need to develop guidelines tailored to primary health care, with an emphasis on simple, practical algorithms and educational models that facilitate the integration of guidelines and mindlines. Such developments could improve patient safety, consistency of care, and the quality of management of hemostasis disorders. Family physicians play a key role in individualizing therapy while continuously balancing risks and benefits.

Conclusion. The monitoring and management of hemostasis disorders in family medicine require a balanced approach that integrates evidence-based guidelines with clinical mindlines shaped by experience and the context of practice. High-quality care depends on achieving a balance between adherence to guidelines and experiential flexibility. The development of practical, clearly structured, and accessible guidelines, together with the promotion of reflective clinical practice, is essential for optimal patient management in primary health care.

REFERENCES:

1. Samur BM, Samur TG, Çiflikli FE, i sur. Evaluation of primary care physicians' approaches to hemophilia and bleeding disorders: a questionnaire survey. Blood Coagul Fibrinolysis. 2022;33(7):381-388. doi: 10.1097/MBC.0000000000001152.
2. Tiede A, Susen S, Lisman T. Acquired bleeding disorders. Haemophilia. 2024;30 Suppl 3:29-38. Afrikaans. doi: 10.1111/hae.14995.
3. Peyvandi F, Klamroth R, Carcao M, i sur. Management of bleeding disorders in adults. Haemophilia. 2012;18 Suppl 2:24-36. doi: 10.1111/j.1365-2516.2012.02797.x.
4. Weyand AC, Flood VH. Von Willebrand Disease: Current Status of Diagnosis and Management. Hematol Oncol Clin North Am. 2021 Dec;35(6):1085-1101. doi: 10.1016/j.hoc.2021.07.004.
5. Simon SJ, Patell R, Zwicker JI, i sur. Venous Thromboembolism in Total Hip and Total Knee Arthroplasty. JAMA Netw Open. 2023;6(12):e2345883. doi: 10.1001/jamanetworkopen.2023.45883.

Kardiorenometabolički sindrom – definicija i stadiji bitni u svakodnevnoj praksi

Valerija Bralić Lang[1, 2,3,4]

1. Specijalistička ordinacija obiteljske medicine prim. dr. sc. Valerija Bralić Lang, dr. med., spec. obiteljske medicine, Zagreb
2. Katedra za obiteljsku medicinu, Medicinski fakultet, Sveučilište u Zagrebu
3. Društvo nastavnika opće/obiteljske medicine, Zagreb
4. Akademija medicisnkih znanosti Hrvatske

Ključne riječi: kardiorenometabolički sindrom, liječnik obiteljske medicine
Adresa za dopisivanje: doc. prim. dr. sc. Valerija Bralić Lang, dr. med., spec. obiteljske med., Zvonigradska 9, 10 000 Zagreb, Hrvatska
E adresa: valerija.bralic.lang@gmail.com
ORCID: 0000-0002-9142-1569

Uvod: Kardiorenometabolički (KRM) sindrom obuhvaća skup međusobno povezanih poremećaja uključujući pretilost, dijabetes, kroničnu bubrežnu bolest (KBB) i kardiovaskularne bolesti (KVB). Ovaj sindrom odražava složene patofiziološke veze između kardiovaskularnog, bubrežnog i metaboličkog sustava te je povezan s povećanom stopom smrtnosti, pobola i visokim troškovima zdravstvene skrbi. Liječnici obiteljske medicine (LOM) imaju važnuu ulogu u ranom prepoznavanju i prevenciji KRM sindroma. Cilj ovoga rada je prikazati aktualne spoznaje o patofiziologiji, razvojnim stadijima, čimbenicima rizika i mogućnostima prepoznavanja KRM sindroma relevantnima za svakodnevnu praksu LOM-a.

Rasprava: Kardiovaskularne, bubrežne i metaboličke bolesti patofiziološki su međuovisne, što predstavlja značajan globalni zdravstveni izazov te je povezano s porastomm morbiditeta i mortaliteta. Američko udruženje za srce (engl. American Heart Association, AHA) je 2023. godine ovu složenu povezanost zdravstvenih poremećaja definiralo kao kardiovaskularno-renalno-metabolički (engl. cardiovascular-renal-metabolic, CRM) sindrom i dijeli ga u pet stadija (0-4) na temelju čimbenika rizika, funkcije bubrega i težine bolesti. Stadiji se kreću od 0 (bez čimbenika rizika) do četiri (klinička bolest), s ciljem usmjeravanja rane intervencije kako bi se spriječila progresija i potaknula regresija. Temelj sindroma čine zajednički patofiziološki mehanizmi, poput kronične upale, oksidativnog stresa, hiperglikemije i inzulinske rezistencije, aktivacije renin-angiotenzin-aldosteronskog sustava te neurohormonske disfunkcije. Navedeni mehanizmi potiču začarani krug u kojem oštećenje jednog organa dovodi do postupnog pogoršanja funkcije ostalih. Umjesto promatranja ovih bolesti kao zasebnih entiteta, preporučuje se integrirani i holistički pristup liječenju, karakterističan za rad LOM-a, s ciljem smanjenja javnozdravstvenog opterećenja i unaprjeđenja kvalitete života bolesnika.

Zaključak: Sagledavanje KRM sindroma kao jedinstvenog kliničkog entiteta omogućuje dublje razumijevanje zajedničkih i međusobno isprepletenih patofizioloških mehanizama koji povezuju metaboličke procese, srce i bubrege. Specijalisti obiteljske medicine nalaze se u posebno povoljnom položaju za pružanje usmjerenog i cjelovitog liječenja bolesnika, integriranjem svih dostupnih informacija o bolesniku te sprječavanjem fragmentacije zdravstvene skrbi kroz koordinaciju multidisciplinarne suradnje.

LITERATURA:

1. Ndumele CE, Rangaswami J, Chow SL, Neeland IJ, Tuttle KR, Khan SS, et al. American Heart Association. Cardiovascular-Kidney-Metabolic Health: A Presidential Advisory From the American Heart Association. Circulation. 2023;148(20):1606-35.
2. Mutruc V, Bologa C, ?orodoc V, Ceasovschih A, Mor?ra?u BC, ?orodoc L, Catar OE, Lionte C. Cardiovascular-Kidney-Metabolic Syndrome: A New Paradigm in Clinical Medicine or Going Back to Basics? J Clin Med. 2025;14(8):2833.
3. Li J, Lei L, Wang W, Ding W, Yu Y, Pu B, et al. Social Risk Profile and Cardiovascular-Kidney-Metabolic Syndrome in US Adults. J Am Heart Assoc. 2024;13(16):e034996.
4. Guldan M, Unlu S, Abdel-Rahman SM, Ozbek L, Gaipov A, Covic A, et al. Understanding the Role of Sex Hormones in Cardiovascular Kidney Metabolic Syndrome: Toward Personalized Therapeutic Approaches. J Clin Med. 2024;13(15):4354..

Cardiorenometabolic syndrome – definition and stages essential in daily practice

Valerija Bralić Lang[1,2,3,4]

1. Family Physician Office, Zagreb, Croatia
2. Department of Family Medicine, School of Medicine, University of Zagreb
3. Association of teachers in general practice / family medicine, Zagreb
4. Croatian Academy of Medical Sciences

Keywords: cardiorenometabolic syndrome, family physician
Correspondence address: doc. prim. dr. sc. Valerija Bralić Lang, dr. med., spec. obiteljske med., Zvonigradska 9, 10 000 Zagreb, Hrvatska
E-mail: valerija.bralic.lang@gmail.com
ORCID: 0000-0002-9142-1569

Introduction: Cardiorenometabolic (CRM) syndrome encompasses a group of interrelated disorders, including obesity, diabetes mellitus, chronic kidney disease (CKD), and cardiovascular disease (CVD). This syndrome reflects complex pathophysiological interactions between the cardiovascular, renal, and metabolic systems and is associated with increased mortality, morbidity, and high healthcare costs. Family medicine specialists (FMSs) play an important role in the early detection and prevention of CRM syndrome. The aim of this paper is to present current knowledge on the pathophysiology, stages of development, risk factors, and approaches to recognizing CRM syndrome that are relevant to everyday family medicine practice.

Discussion: Cardiovascular, renal, and metabolic diseases are pathophysiologically interconnected, representing a significant global health challenge and being associated with increased morbidity and mortality. In 2023, the American Heart Association (AHA) defined this complex interrelationship of health disorders as the cardiovascular–renal–metabolic (CRM) syndrome and is divided into five stages (0-4) based on risk factors, kidney function, and disease severity. The stages range from 0 (no risk factors) to 4 (clinical disease), aiming to guide early intervention to prevent progression and promote regression. The syndrome is based on shared pathophysiological mechanisms, including chronic inflammation, oxidative stress, hyperglycemia and insulin resistance, activation of the renin–angiotensin–aldosterone system, and neurohormonal dysfunction. These mechanisms initiate a vicious cycle in which damage to one organ leads to the progressive deterioration of others. Rather than treating these conditions as separate entities, an integrated and holistic approach to patient care—characteristic of family medicine practice—is recommended, with the aim of reducing the public health burden and improving patients' quality of life.

Conclusion: Understanding CRM syndrome as a single clinical entity enables a deeper understanding of the shared and interconnected pathophysiological mechanisms linking metabolic processes, the heart, and the kidneys. FMSs are in a uniquely favorable position to provide targeted and comprehensive patient care by integrating all available patient information and preventing fragmentation of healthcare through coordination of multidisciplinary collaboration.

REFERENCES:

1. Ndumele CE, Rangaswami J, Chow SL, Neeland IJ, Tuttle KR, Khan SS, et al. American Heart Association. Cardiovascular-Kidney-Metabolic Health: A Presidential Advisory From the American Heart Association. Circulation. 2023;148(20):1606-35.
2. Mutruc V, Bologa C, ?orodoc V, Ceasovschih A, Mor?ra?u BC, ?orodoc L, Catar OE, Lionte C. Cardiovascular-Kidney-Metabolic Syndrome: A New Paradigm in Clinical Medicine or Going Back to Basics? J Clin Med. 2025;14(8):2833.
3. Li J, Lei L, Wang W, Ding W, Yu Y, Pu B, et al. Social Risk Profile and Cardiovascular-Kidney-Metabolic Syndrome in US Adults. J Am Heart Assoc. 2024;13(16):e034996.
4. Guldan M, Unlu S, Abdel-Rahman SM, Ozbek L, Gaipov A, Covic A, et al. Understanding the Role of Sex Hormones in Cardiovascular Kidney Metabolic Syndrome: Toward Personalized Therapeutic Approaches. J Clin Med. 2024;13(15):4354..

MASLD - nezaobilazni dio kardio-reno-metaboličkog sindroma

Sunčana Vlah Tomičević[1]

1. Dom zdravlja Zagreb - Istok

Ključne riječi: steatoza jetre, MASLD, FIB-4
Adresa za dopisivanje: Sunčana Vlah Tomičević, Grižanska 4, Zagreb
E adresa: suncanav@gmail.com
ORCID: 0000-0001-7461-5866

Uvod s ciljem: Bolest masne jetre povezane s metaboličkom disfukcijom (MASLD - Metabolic dysfunction–associated steatotic liver disease) postaje sve veći javnozdravstveni problem, posebno povezan sa šećernom bolesti tipa 2 i debljinom. Smatra se da je globalna prevalencija bolesti veća od 30% dok se u osoba sa šećernom bolesti tipa 2 u Sjedinjenim Američkim Državama podiže na 70%. Prema novom konsensusu vodećih hepatoloških društava (EASL, EASD i EASO) napustio se raniji naziv NAFLD (non-alcoholic fatty liver disease) jer ne naglašava kardiometaboličke rizične faktore kao glavne pokretače, ali i posljedice bolesti.

Cilj rada je opisati osnovne postupke prepoznavanja i dijagnostike na razini primarne zdravstvene zaštite.

Rasprava: MASLD je dio veće skupine steatotične bolesti jetre (SLD - steatotic liver

disease), a obuhvaća nekoliko različitih stanja kao što su izolirana steatoza jetre povezana s metaboličkom disfunkcijom (MASL - metabolic dysfunction-associated steatotic liver), steatohepatitis povezan s metaboličkom disfunkcijom (MASH - metabolic dysfunction-associated steatohepatitis), fibroza, ciroza jetre i MASH-om povezani hepatocelularni karcinom. Ukoliko je sumnja na steatotičnu bolest jetre postavljena radiološki, prilikom definicije bolesti potrebno je procjeniti prisutnost najvažnijih kardiometaboličkih faktora i unosa alkoholnih pića. Od kardiometaboličkih faktora najvažniji su prekomjerna tjelesna težina i pretilost (opseg struka za europsku populaciju ≥94 cm u muškaraca i ≥80 cm u žena, ITM ≥25 kg/m2), predijabetes, šećerna bolest ili liječenje iste, triglicerida u plazmi ≥1.7 mmol/L, HDL ≤1.0 mmol/L u muškaraca ili ≤1.3 mmol/L u žena ili liječenje hipolipemicima u oba slučaja, krvni tlak ≥130/85 mmHg ili uzimanje terapije za hipertenziju. Na alkoholnu komponentu bolesti treba pomišljati u slučaju dnevnog unosa alkohola >30 g kod muškaraca i >20 g kod žena. Iako je steatotična bolest jetre visoke prevalencije, probir u općoj populaciji se ne preporučuje. Probir se radi bolesnicima sa šećernom bolesti tipa 2, pretilim bolesnicima s jednim ili više ranije nabrojenih kardiometaboličkih rizika i onima koji konstantno imaju povišene jetrene enzime, pogotovo aspartat i alanin aminotransferaze (AST i ALT). Nakon pitanja o unosu alkoholnog pića, potrebno je izračunati fibroza-4 indeks (FIB-4) te prema tome postupiti dalje. FIB-4 je instrument koji na temelju godina starosti, vrijednosti trombocita, AST-a i ALT-a izračunava vjerojatnost postojanja fibroze unutar MASLD-a. Vrijednosti do 1.3 smatraju se normalnima dok vrijednosti >2.67 (>2.0 kod starijih od 65) zahtjevaju upućivanje gastroenterologu-hepatologu. Instrument je manje osjetljiv u otkrivanju fibroze u rasponu od 1.3-2.67 kao i u dijabetičara i starijih te se tada indicira elastografija ili intenzivirano liječenje komorbiditeta s ponovnom procjenom za godinu dana ili prije. Najvažniji problem bolesti je veća učestalost javljanja hepatocelularnog, ali i ekstracelularnih karcinoma kao i nefatalnih kardiovaskularnih incidenata, kronične bubrežne bolesti, dijabetičke polineuropatije i opstruktivne apneje.

Zaključak: Sve veća prevalencija MASLD postavlja obiteljskog liječnika u središnju ulogu ranog prepoznavanja i zbrinjavanja bolesti. Ranim liječenjem šećerne bolesti tipa 2 i debljine kao i savjetima prevencije, uvelike se može utjecati na progresiju bolesti i pojavu ostalih nepovoljnih stanja u sklopu kardio-reno-metaboličkog sindroma.

LITERATURA:

1. European Association for the Study of the Liver (EASL); European Association for the Study of Diabetes (EASD); European Association for the Study of Obesity (EASO). EASL-EASD-EASO Clinical Practice Guidelines on the management of metabolic dysfunction-associated steatotic liver disease (MASLD). J Hepatol. 2024 Sep;81(3):492-542.
2. Cusi K, Abdelmalek MF, Apovian CM, i sur. Metabolic Dysfunction–Associated Steatotic Liver Disease (MASLD) in People With Diabetes: The Need for Screening and Early Intervention. A Consensus Report of the American Diabetes Association. Diabetes Care 20 June 2025; 48 (7): 1057–1082.
3. Liu Y, Zhong GC, Tan HY, et al. Nonalcoholic fatty liver disease and mortality from all causes, cardiovascular disease, and cancer: a meta-analysis.Sci Rep 2019;9(1):11124.
4. Alexander M, Loomis AK, van der Lei J, et al. Risks and clinical predictors of cirrhosis and hepatocellular carcinoma diagnoses in adults with diagnosed NAFLD: real-world study of 18 million patients in four European cohorts.BMC Med 2019;17(1):95.
5. Godoy-Matos AF, Valério CM, Júnior WSS, de Araujo-Neto JM, Sposito AC, Suassuna JHR. CARDIAL-MS (CArdio-Renal-DIAbetes-Liver-Metabolic Syndrome): a new proposition for an integrated multisystem metabolic disease. Diabetol Metab Syndr. 2025 Jun 16;17(1):218.

MASLD - an Inevitable Part of Cardiovascular-Kidney-Metabolic Syndrome

Sunčana Vlah Tomičević[1]

1. Health Center Zagreb - East

Keywords: steatotic liver, MASLD, FIB-4
Correspondence address: Sunčana Vlah Tomičević, Grižanska 4, Zagreb
E-mail: suncanav@gmail.com
ORCID: 0000-0001-7461-5866

Introduction with aim: Metabolic dysfunction–associated steatotic liver disease (MASLD) is becoming a more serious public health problem, especially associated with type 2 diabetes and obesity. Global prevalence is estimated to be higher than 30%, while the prevalence in people with type 2 diabetes in the United States tends to be 70%. According to the consensus statement of leading hepatological societies (EASL, EASD, and EASO), the former name non-alcoholic fatty liver disease (NAFLD) doesn't position cardio-metabolic risk factors as leading initiators or as effects of the disease. This study aims to describe the basic procedures for recognising and diagnosing the disease at the primary care level.

Discussion: MASLD is part of the larger group of steatotic liver disease (SLD) with the following categories: metabolic dysfunction-associated steatotic liver (MASL), metabolic dysfunction-associated steatohepatitis (MASH), fibrosis, cirrhosis, and MASH-related hepatocellular carcinoma. If the liver is described as steatotic on ultrasound, to define the disease, the presence of cardiometabolic risk factors and alcohol intake should be assessed. The most important cardiometabolic risk factors are being overweight or obese (waist circumference ≥94 cm in European men and ≥80 cm in European women or BMI ≥25 kg/m2), dysglycaemia, type 2 diabetes, or treatment of it, plasma triglycerides ≥1.7 mmol/L, HDL-cholesterol ≤1.0 mmol/L in men and ≤1.3 mmol/L in women, or lipid-lowering treatment, and blood pressure ≥130/85 mmHg or treatment for hypertension. Alcohol can be suspected as a cause if there is a consumption larger than 30g for men, and 20g for women, per day. Although steatotic liver disease is highly prevalent, screening in the general population is not recommended. Screening is reserved for people with type diabetes, obese patients with one or more cardiometabolic risk factors, and patients with persistently elevated liver enzymes (especially aspartate (AST) and alanine aminotransferase (ALT)). After assessing alcohol consumption, the fibrosis-4 index (FIB-4) should be calculated to proceed. FIB-4 is an instrument that gives the probability of liver fibrosis and is based on four parameters: age, platelet count, AST, and ALT. Values <1.3 are considered normal, while values >2.67 (or >2.0 in people older than 65) indicate gastroenterology referral. The instrument is less sensitive for liver fibrosis in the range of 1.3-2.67, in diabetics, and the elderly, so elastography or intensified management of comorbidities is recommended with reassessment in a year or sooner. The most prominent complications of the disease include hepatocellular or other carcinomas, as well as non-fatal cardiovascular disease, chronic kidney disease, peripheral polyneuropathy, and obstructive sleep apnoea.

Conclusion: The higher prevalence of MASLD allows the family physician to have a central role in early recognition and treatment of the disease. Early treatment of type 2 diabetes or obesity, and preventative advice, is a great possibility to influence the progression of the disease and the occurrence of other conditions in cardiovascular-kidney-metabolic syndrome.

REFERENCES:

1. European Association for the Study of the Liver (EASL); European Association for the Study of Diabetes (EASD); European Association for the Study of Obesity (EASO). EASL-EASD-EASO Clinical Practice Guidelines on the management of metabolic dysfunction-associated steatotic liver disease (MASLD). J Hepatol. 2024 Sep;81(3):492-542.
2. Cusi K, Abdelmalek MF, Apovian CM, i sur. Metabolic Dysfunction–Associated Steatotic Liver Disease (MASLD) in People With Diabetes: The Need for Screening and Early Intervention. A Consensus Report of the American Diabetes Association. Diabetes Care 20 June 2025; 48 (7): 1057–1082.
3. Liu Y, Zhong GC, Tan HY, et al. Nonalcoholic fatty liver disease and mortality from all causes, cardiovascular disease, and cancer: a meta-analysis.Sci Rep 2019;9(1):11124.
4. Alexander M, Loomis AK, van der Lei J, et al. Risks and clinical predictors of cirrhosis and hepatocellular carcinoma diagnoses in adults with diagnosed NAFLD: real-world study of 18 million patients in four European cohorts.BMC Med 2019;17(1):95.
5. Godoy-Matos AF, Valério CM, Júnior WSS, de Araujo-Neto JM, Sposito AC, Suassuna JHR. CARDIAL-MS (CArdio-Renal-DIAbetes-Liver-Metabolic Syndrome): a new proposition for an integrated multisystem metabolic disease. Diabetol Metab Syndr. 2025 Jun 16;17(1):218.

Sleep apnea i kardiometaboličko zdravlje

Ksenija Kranjčević[1,2]

1. Specijalistička ordinacija obiteljske medicine dr.sc. Ksenija Kranjčević
2. Katedra za obiteljsku medicinu Škola narodnog zdravlja Andrija Štampar, Medicinski fakultet Sveučilišta u Zagrebu

Ključne riječi: opstruktivna apneja u snu, kardiometaboličko zdravlje
Adresa za dopisivanje: H. Macanovića 2a, Zagreb
E adresa: ksenija.kranjcevic@inet.hr
ORCID: 0000-0001-6528-8357

Uvod s ciljem. Opstruktivna apneja u snu (engl. Obstructive sleep apnea, OSA) je jedan od najčešćih poremećaja spavanja, a karakteriziraju je ponavljajući prekidi disanja tijekom spavanja zbog potpunoga (apneja) ili djelomičnoga (hipoapneja) kolapsa dijela gornjih dišnih puteva. OSA se sastoji od epizoda apneje ili hipopneje u trajanju od barem 10 sekundi koje su praćene pojačanim disanjem, smanjenom saturacijom kisika i/ili buđenjem. Ukupan broj epizoda apneje i hipopneje po satu spavanja prikazuje se apneja-hipopneja indeksom (AHI) i predstavlja osnovni polisomnografski kriterij za postavljanje dijagnoze i određivanje stupnja težine OSA-e. Prema vrijednosti AHI-ja razlikujemo blagi (5–14), umjereni (15–29) i teški stupanj OSA-e (≥30) uz prisutnost simptoma i znakova poremećaja spavanja. Cilj ovog rada je prikazati utjecaj OSA-e na kardiometaboličko zdravlje.

Rasprava. Poznato je da kvalitetan san ima ključnu ulogu u brojnim fiziološkim procesima organizma uključujući kardiovaskularnu aktivnost, regulaciju metabolizma glukoze i lipida te lučenja hormona. Brojna istraživanja dokazala su da poremećaji spavanja poput prekratkog ili predugog vremenskog perioda spavanja, loše kvalitete sna, sindroma nemirnih nogu i najučestalije OSA-e dovode do razvoja kardiometaboličkih bolesti. Cikličke epizode hipoksemije i hiperkapnije dovode do pojačane aktivacije simpatikusa, varijabilnosti srčanoga pulsa i arterijskog tlaka, lučenja vazoaktivnih tvari, upale, oksidacijskoga stresa, disfunkcije endotela, inzulinske rezistencije i tromboze, a ponavljajući porast negativnoga intratorakalnog tlaka, što se događa tijekom svake epizode apneje, dovodi do ponavljajućih padova brzine protoka u moždanoj cirkulaciji i time do ishemijskih promjena mozga. Više od 50% bolesnika s OSA-om ima hipertenziju i srčane aritmije poput fibrilacije atrija, AV bloka 2. stupnja, VES, a incidencija u pretilih dijabetičara tipa 2 je čak 87%. Iako je debljina jedan od ključnih čimbenika rizika za razvoj OSA-e, rezultati opservacijskih istraživanja pokazali su da je OSA neovisni čimbenik rizika za razvoj hipertenzije i šećerne bolesti tipa 2 bez obzira na indeks tjelesne mase (ITM). U odraslih, prevalencija OSA-e je 2 do 9% no taj je broj vjerojatno veći obzirom da često ostaje neprepoznata, naročito u žena. Simptomi uključuju hrkanje, epizode prestanka disanja tijekom spavanja, dnevnu pospanost i umor, a najveći rizični čimbenici su starija životna dob, muški spol i pretilost. Na temelju anamneze, dostupnih kratkih upitnika kao metode probira i kliničkog pregleda možemo postaviti sumnju na postojanje poremećaja disanja vezanog uz spavanje te stoga liječnik obiteljske medicine ima ključnu ulogu u ranom prepoznavanju oboljelih. Danas se za probir najčešće koristi engl. STOP BANG upitnik koji je kratak i jednostavan za primjenu u ordinaciji liječnika obiteljske medicine, a u dosadašnjim ispitivanjima pokazao je veću osjetljivost i specifičnost od do sada upotrebljavanih Epworthovog i Berlinskog upitnika Definitivnu dijagnozu potvrdit će nalaz cjelonoćne polisomnografije.

Zaključak Opstruktivna apneja u snu najčešći je poremećaj disanja tijekom spavanja. Riječ je o relativno čestom, ali nedovoljno prepoznatom medicinskom problemu koji je povezan s brojnim kroničnim bolestima poput hipertenzije, metaboličkog sindroma, šećerne bolesti i slično. Rano otkrivanje i praćenje opstruktivne apneje u snu ne služi samo poboljšanju kvalitete sna već i u prevenciji kardiometaboličkih bolesti.

LITERATURA:

1. Tasali E, Pamidi S, Covassin N, Somers VK. Obstructive Sleep Apnea and Cardiometabolic Disease: Obesity, Hypertension, and Diabetes. Circ Res. 2025;137(5):764-87. doi:10.1161/CIRCRESAHA.125.325676.
2. Qasrawi SO, BaHammam AS. Role of Sleep and Sleep Disorders in Cardiometabolic Risk: a Review and Update. Curr. Sleep Med. Rep. 2024; 10: 34–50. doi:10.1007/s40675-024-00276-x
3. Chen X, Zhang Y, Wang Y, Tang Y, Zhang K, Wu J. The Cardiometabolic Index (CMI) is associated with an increased risk of obstructive sleep apnea: a population-based study. Eur J Med Res.2025;31(1):127. doi: 10.1186/s40001-025-03687-w.
4. van Ede ES, Nienhuijs SW, Goossens GH, Bouwman RA, Buise MP. The impact of duration and severity of obesity exposure on cardiometabolic health. Obes Surg. 2024;34(7):2587-95. doi: 10.1007/s11695-024-07331-0.

Sleep Apnea and Cardiometabolic Health

Ksenija Kranjčević[1,2]

1. Specialist Family Medicine Practice, Dr. sc. Ksenija Kranjčević
2. Department of Family Medicine, Andrija Štampar School of Public Health, School of Medicine, University of Zagreb

Keywords: obstructive sleep apnea, cardiometabolic health
Correspondence address: H. Macanovića 2a, Zagreb
E-mail: ksenija.kranjcevic@inet.hr
ORCID: 0000-0001-6528-8357

Introduction with Aim. Obstructive sleep apnea (OSA) is one of the most common sleep disorders and is characterized by recurrent interruptions of breathing during sleep due to complete (apnea) or partial (hypopnea) collapse of a portion of the upper airway. OSA consists of episodes of apnea or hypopnea lasting at least 10 seconds, accompanied by increased respiratory effort, reduced oxygen saturation, and/or arousal. The total number of apnea and hypopnea episodes per hour of sleep is expressed as the apnea–hypopnea index (AHI) and represents the basic polysomnographic criterion for establishing the diagnosis and determining the severity of OSA. According to AHI values, OSA is classified as mild (5–14), moderate (15–29), and severe (≥30), in the presence of symptoms and signs of sleep disturbance. The aim of this paper is to present the impact of OSA on cardiometabolic health.

Discussion. It is well known that adequate sleep plays a key role in numerous physiological processes, including cardiovascular activity, regulation of glucose and lipid metabolism, and hormone secretion. Numerous studies have shown that sleep disorders such as short or long sleep duration, poor sleep quality, restless legs syndrome, and most commonly OSA, contribute to the development of cardiometabolic diseases. Cyclic episodes of hypoxemia and hypercapnia lead to increased sympathetic activation, variability in heart rate and arterial blood pressure, secretion of vasoactive substances, inflammation, oxidative stress, endothelial dysfunction, insulin resistance, and thrombosis. Repeated increases in negative intrathoracic pressure during each apnea episode result in recurrent reductions in cerebral blood flow velocity and consequently ischemic brain changes. More than 50% of patients with OSA have hypertension and cardiac arrhythmias such as atrial fibrillation, second-degree AV block, and premature ventricular contractions, while the incidence among obese patients with type 2 diabetes is as high as 87%. Although obesity is one of the key risk factors for the development of OSA, observational studies have shown that OSA is an independent risk factor for the development of hypertension and type 2 diabetes mellitus regardless of body mass index (BMI). In adults, the prevalence of OSA ranges from 2% to 9%, although this figure is likely higher due to frequent underdiagnosis, particularly in women. Symptoms include snoring, witnessed apneas during sleep, excessive daytime sleepiness, and fatigue, while the major risk factors are older age, male sex, and obesity. Based on medical history, available short screening questionnaires, and clinical examination, suspicion of sleep-disordered breathing can be established; therefore, the family physician plays a crucial role in early recognition. Today, the STOP-BANG questionnaire is most commonly used for screening. It is brief and easy to administer in family practice settings and has demonstrated higher sensitivity and specificity compared to the previously used Epworth and Berlin questionnaires. Definitive diagnosis is confirmed by overnight polysomnography.

Conclusion. Obstructive sleep apnea is the most common sleep-related breathing disorder. It is a relatively common but insufficiently recognized medical condition associated with numerous chronic diseases such as hypertension, metabolic syndrome, diabetes mellitus, and others. Early detection and monitoring of obstructive sleep apnea serve not only to improve sleep quality but also to prevent cardiometabolic diseases.

REFERENCES:

1. Tasali E, Pamidi S, Covassin N, Somers VK. Obstructive Sleep Apnea and Cardiometabolic Disease: Obesity, Hypertension, and Diabetes. Circ Res. 2025;137(5):764-87. doi:10.1161/CIRCRESAHA.125.325676.
2. Qasrawi SO, BaHammam AS. Role of Sleep and Sleep Disorders in Cardiometabolic Risk: a Review and Update. Curr. Sleep Med. Rep. 2024; 10: 34–50. doi:10.1007/s40675-024-00276-x
3. Chen X, Zhang Y, Wang Y, Tang Y, Zhang K, Wu J. The Cardiometabolic Index (CMI) is associated with an increased risk of obstructive sleep apnea: a population-based study. Eur J Med Res.2025;31(1):127. doi: 10.1186/s40001-025-03687-w.
4. van Ede ES, Nienhuijs SW, Goossens GH, Bouwman RA, Buise MP. The impact of duration and severity of obesity exposure on cardiometabolic health. Obes Surg. 2024;34(7):2587-95. doi: 10.1007/s11695-024-07331-0.

Novosti u liječenju dislipidemija: „što prije, što niže, to bolje“

Diana Sabljak Malkoč[1]

1. Dom zdravlja Sisačko-moslavačke županije

Ključne riječi: dislipidemije, kardiovaskularne bolesti, LDL kolesterol, prevencija
Adresa za dopisivanje: Lipa 58, Repušnica, 44320 Kutina
E adresa: diana.sabljak@gmail.com
ORCID: 0000-0003-4691-0045

Uvod s ciljem: Dislipidemije su jedan od ključnih modificirajućih čimbenika kardiovaskularnog (KV) rizika i vodeći terapijski cilj u prevenciji aterosklerotske KV bolesti. Europske kardiološke smjernice iz 2019. godine postavile su temelj suvremenog pristupa liječenju dislipidemija. Nove smjernice iz 2025. godine dodatno nadopunjuju i proširuju prethodne preporuke u skladu s novim dokazima iz kliničkih studija i novim terapijskim opcijama. Cilj ovog rada je prikazati glavne novosti i njihov klinički značaj u svakodnevnoj praksi.

Rasprava: Smjernice Europskog kardiološkog društva za zbrinjavanje dislipidemija naglašavaju da procijenjeni apsolutni rizik osobe od akutnog kardiovaskularnog događaja treba biti temelj za određivanje intenziteta snižavanja LDL kolesterola. Snižavanje razine LDL kolesterola u plazmi treba biti glavni fokus za sprječavanje aterosklerotskih kardiovaskularnih događaja. Umjesto dosadašnjeg SCORE (engl. Systematic Coronary Risk Evaluation) sustava preporučuje se primjena algoritama SCORE2 i SCORE2-OP (engl. Systematic Coronary Risk Evaluation 2-Older Persons) za procjenu 10-godišnjeg rizika fatalnih i nefatalnih kardiovaskularnih događaja. Ovo omogućuje precizniju procjenu ukupnog KV rizika, uključivši osobe starije od 70 godina. Prisutnost subkliničke ateroskleroze na slikovnoj dijagnostici, povećan kalcijski skor (engl. Calcium scoring) koronarnog kalcija ili povišene vrijednosti lipoproteina (a) treba smatrati modifikatorima rizika kod osoba s umjerenim KV rizikom ili osoba blizu praga odluke o liječenju. Mjerenje lipoproteina (a) treba razmotriti barem jednom u životu svake odrasle osobe. Ciljevi liječenja LDL kolesterola i terapijske smjernice se nisu promijenili. Naglašava se važnost točne procjene KV rizika bez obzira na dob i individualno određivanje optimalnog vremena i intenziteta snižavanja LDL kolesterola radi smanjenja preostalog rizika. U bolesnika s akutnim koronarnim sindromom preporučuje se terapijska strategija „što prije, što niže, to bolje“, uz rano intenziviranje ili započinjanje kombinirane hipolipemijske terapije. LDL kolesterol treba provjeriti 4 do 6 tjedana nakon početka ili intenziviranja terapije. Hipertrigliceridemija je neovisno povezana s KV rizikom, pri čemu statini ostaju terapija prvog izbora. Kod osoba s virusom humane imunodeficijencije preporučuje se liječenje statinima starijim od 40 godina bez obzira na LDL kolesterol. Primarnu prevenciju statinima se preporučuje uzeti u obzir i kod osoba izloženih kemoterapiji s visokim KV rizikom. Iako je zdrava prehrana ključna za smanjenje aterogenih lipida, prehrambeni dodaci ili vitamini nisu preporučeni za smanjenje LDL kolesterola ili KV rizika.

Zaključak: Europske kardiološke smjernice iz 2025. godine jasno pomiču fokus prema ranijoj, intenzivnijoj i personaliziranoj terapiji. Naglasak na vrlo niskim vrijednostima LDL kolesterola, ranoj kombiniranoj terapiji, važnosti lipoproteina te na poboljšanju adherencije ima potencijal dodatno smanjiti teret aterosklerotske KV bolesti. Primjena ovih preporuka u svakodnevnoj kliničkoj praksi može unaprijediti prevenciju i omogućiti bolje ishode bolesnika s dislipidemijama.

LITERATURA:

1. ESC Scientific Document Group. 2019 ESC/EAS guidelines for the management of dyslipidaemias: lipid modification to reduce cardiovascular risk: the Task Force for the management of dyslipidaemias of the European Society of Cardiology (ESC) and European Atherosclerosis Society (EAS). Eur Heart J. 2020 Jan 1;41(1):111–188. doi:10.1093/eurheartj/ehz455
2. ESC Scientific Document Group. 2021 ESC guidelines on cardiovascular disease prevention in clinical practice: developed by the Task Force for cardiovascular disease prevention in clinical practice with representatives of the European Society of Cardiology and 12 medical societies with the special contribution of the European Association of Preventive Cardiology (EAPC). Eur Heart J. 2021 Sep 7;42(34):3227–3337. doi:10.1093/eurheartj/ehab484
3. ESC/EAS Scientific Document Group. 2025 focused update of the 2019 ESC/EAS guidelines for the management of dyslipidaemias: developed by the task force for the management of dyslipidaemias of the European Society of Cardiology (ESC) and the European Atherosclerosis Society (EAS). Eur Heart J. 2025 Nov 7;46(42):4359–4378. doi:10.1093/eurheartj/ehaf190

Updates in the Management of Dyslipidaemias: ‘the sooner, the lower, the better’

Diana Sabljak Malkoč[1]

1. Health Care Centre Sisačko-moslavačka County

Keywords: dyslipidaemias, cardiovascular diseases, LDL cholesterol, prevention
Correspondence address: Lipa 58, Repušnica, 44320 Kutina
E-mail: diana.sabljak@gmail.com
ORCID: 0000-0003-4691-0045

Introduction and Aim: Dyslipidaemias are among the key modifiable cardiovascular (CV) risk factors and represent a leading therapeutic target in the prevention of atherosclerotic cardiovascular disease. The 2019 European Society of Cardiology (ESC) guidelines laid the foundation for a modern approach to the management of dyslipidaemias. The 2025 focused update further complements and expands previous recommendations in accordance with new evidence from clinical trials and the availability of new therapeutic options. The aim of this paper is to present the main novelties and their clinical relevance in everyday practice.

Discussion: The ESC guidelines for the management of dyslipidaemias emphasize that an individual’s estimated absolute risk of an acute cardiovascular event should form the basis for determining the intensity of LDL cholesterol lowering. Reduction of plasma LDL cholesterol levels should be the primary focus in the prevention of atherosclerotic cardiovascular events. Instead of the previously used SCORE (Systematic Coronary Risk Evaluation) system, the use of SCORE2 and SCORE2-OP (Systematic Coronary Risk Evaluation 2–Older Persons) algorithms is recommended for estimating the 10-year risk of fatal and non-fatal cardiovascular events. This allows a more accurate assessment of overall CV risk, including individuals older than 70 years. The presence of subclinical atherosclerosis on imaging, an increased coronary artery calcium score, or elevated lipoprotein(a) levels should be considered as risk modifiers in individuals at moderate CV risk or those close to the treatment decision threshold. Measurement of lipoprotein(a) should be considered at least once during the lifetime of every adult. LDL cholesterol treatment targets and therapeutic recommendations have not changed. The importance of accurate CV risk assessment regardless of age and individualized determination of the optimal timing and intensity of LDL cholesterol lowering to reduce residual risk is emphasized. In patients with acute coronary syndrome, a therapeutic strategy of “the earlier, the lower, the better” is recommended, with early intensification or initiation of combined lipid-lowering therapy. LDL cholesterol should be reassessed 4 to 6 weeks after initiation or intensification of therapy. Hypertriglyceridaemia is independently associated with CV risk, with statins remaining the first-line therapy. In people living with human immunodeficiency virus, statin therapy is recommended from the age of 40 years regardless of LDL cholesterol levels. Statin therapy for primary prevention should also be considered in individuals exposed to chemotherapy who are at high CV risk. Although a healthy diet is essential for reducing atherogenic lipids, dietary supplements or vitamins are not recommended for lowering LDL cholesterol or reducing CV risk.

Conclusion: The 2025 ESC guidelines clearly shift the focus toward earlier, more intensive, and personalized therapy. Emphasis on very low LDL cholesterol levels, early combination therapy, the role of lipoproteins, and improved adherence has the potential to further reduce the burden of atherosclerotic cardiovascular disease. Implementation of these recommendations in everyday clinical practice may enhance prevention strategies and improve outcomes in patients with dyslipidaemias.

REFERENCES:

1. ESC Scientific Document Group. 2019 ESC/EAS guidelines for the management of dyslipidaemias: lipid modification to reduce cardiovascular risk: the Task Force for the management of dyslipidaemias of the European Society of Cardiology (ESC) and European Atherosclerosis Society (EAS). Eur Heart J. 2020 Jan 1;41(1):111–188. doi:10.1093/eurheartj/ehz455
2. ESC Scientific Document Group. 2021 ESC guidelines on cardiovascular disease prevention in clinical practice: developed by the Task Force for cardiovascular disease prevention in clinical practice with representatives of the European Society of Cardiology and 12 medical societies with the special contribution of the European Association of Preventive Cardiology (EAPC). Eur Heart J. 2021 Sep 7;42(34):3227–3337. doi:10.1093/eurheartj/ehab484
3. ESC/EAS Scientific Document Group. 2025 focused update of the 2019 ESC/EAS guidelines for the management of dyslipidaemias: developed by the task force for the management of dyslipidaemias of the European Society of Cardiology (ESC) and the European Atherosclerosis Society (EAS). Eur Heart J. 2025 Nov 7;46(42):4359–4378. doi:10.1093/eurheartj/ehaf190

Smjernice za zatajivanje srca – izazovi i mogućnosti primjene u obiteljskoj medicini

Dragan Gjorgjievski[1]

1. PZU dr. Dragan Gjorgjievski

Ključne riječi: zatajivanje srca, smjernice, obiteljska medicina, edukacija, primarna zdravstvena zaštita
Adresa za dopisivanje: Bulevard Jane Sandanski 90/4-1, Skopje 1000, Sjeverna Makedonija
E adresa: dragan_gjorgjievski@yahoo.com
ORCID: 0000-0003-1817-7632

Uvod s ciljem: Zatajivanje srca (ZS) predstavlja jedan od vodećih uzroka morbiditeta, mortaliteta i hospitalizacija u odrasloj populaciji. S obzirom na kronični tijek bolesti, čestu prisutnost komorbiditeta te potrebu za dugotrajnim praćenjem, obiteljska medicina ima ključnu ulogu u skrbi za ove bolesnike. Aktualne smjernice Europskog kardiološkog društva pružaju jasan okvir za dijagnostiku i liječenje, ali njihova uspješna primjena u svakodnevnoj praksi zahtijeva dodatnu edukaciju i prilagodbu specifičnostima primarne zdravstvene zaštite. Cilj rada je prikazati ključne preporuke suvremenih smjernica za zatajivanje srca s naglaskom na njihovu primjenu u obiteljskoj medicini, osobito u edukaciji liječnika i studenata te unaprjeđenju kliničke prakse.

Materijali i metode: Analizirane su važeće ESC smjernice za dijagnostiku i liječenje akutnog i kroničnog zatajivanja srca te relevantna stručna literatura koja se odnosi na ulogu primarne zdravstvene zaštite. Posebna pozornost posvećena je dijagnostičkim algoritmima, terapijskim preporukama i kontinuiranom praćenju bolesnika u ambulanti obiteljske medicine.

Rasprava: Smjernice ističu važnost rane kliničke sumnje na zatajivanje srca, osobito kod bolesnika s dispnejom, umorom, edemima i poznatim kardiovaskularnim bolestima. U obiteljskoj medicini značajnu ulogu imaju određivanje natriuretskih peptida, osnovna laboratorijska obrada, procjena funkcionalnog statusa te pravodobno upućivanje na ehokardiografiju. Rana primjena preporučene farmakološke terapije, uz postupnu titraciju i redovito praćenje, može značajno smanjiti broj pogoršanja i hospitalizacija. Nastavnici obiteljske medicine imaju važnu ulogu u prenošenju ovih znanja mladim liječnicima i poticanju dosljedne primjene smjernica u praksi.

Zaključak: Primjena smjernica za zatajivanje srca u obiteljskoj medicini predstavlja temelj kvalitetne i kontinuirane skrbi za bolesnike. Edukacija liječnika, integracija smjernica u nastavne programe te jačanje suradnje s kardiolozima ključni su čimbenici za poboljšanje ishoda liječenja i kvalitete života bolesnika.

LITERATURA:

1. McDonagh TA, Metra M, Adamo M, et al. 2021 ESC Guidelines for the diagnosis and treatment of acute and chronic heart failure. Eur Heart J. 2021;42(36):3599–3726
2. Bozkurt B, Coats AJS, Tsutsui H, et al. Universal definition and classification of heart failure. Eur Heart J. 2021;42(36):3613–3636.
3. Seferović PM, Fragasso G, Petrie M, et al. Heart failure association position paper on the role of primary care. Eur J Heart Fail. 2020.

Heart failure guidelines – challenges and opportunities for implementation in family medicine

Dragan Gjorgjievski[1]

1. PZU dr. Dragan Gjorgjievski

Keywords: heart failure, guidelines, family medicine, education, primary health care
Correspondence address: Bulevard Jane Sandanski 90/4-1, Skopje 1000, Sjeverna Makedonija
E-mail: dragan_gjorgjievski@yahoo.com
ORCID: 0000-0003-1817-7632

Introduction with aim: Heart failure (HF) is one of the leading causes of morbidity, mortality, and hospitalizations in the adult population. Due to its chronic course, frequent comorbidities, and the need for long-term follow-up, family medicine plays a central role in the care of patients with heart failure. Current European Society of Cardiology (ESC) guidelines provide a clear framework for diagnosis and management; however, their effective implementation in daily practice requires continuous education and adaptation to the specific context of primary health care. The aim of this paper is to present key recommendations of contemporary heart failure guidelines, with a particular focus on their application in family medicine, especially in the education of physicians and medical students and the improvement of clinical practice.

Materials and Methods: A review of the current ESC guidelines for the diagnosis and treatment of acute and chronic heart failure was conducted, along with relevant literature addressing the role of primary care in heart failure management. Special attention was given to diagnostic algorithms, therapeutic recommendations, and long-term follow-up of patients in family medicine settings.

Discussion: The guidelines emphasize the importance of early clinical suspicion of heart failure, particularly in patients presenting with dyspnea, fatigue, peripheral edema, and a history of cardiovascular disease. In family medicine, the measurement of natriuretic peptides, basic laboratory evaluation, assessment of functional status, and timely referral for echocardiography are of great importance. Early initiation of guideline-directed medical therapy, with gradual dose titration and regular monitoring, can significantly reduce disease progression and hospitalizations. Teachers of family medicine play a crucial role in transferring this knowledge to young physicians and promoting consistent implementation of guidelines in everyday practice.

Conclusion: The implementation of heart failure guidelines in family medicine represents the foundation of high-quality and continuous patient care. Ongoing education, integration of guidelines into teaching curricula, and strengthened collaboration with cardiologists are essential to improving treatment outcomes and patients' quality of life.

REFERENCES:

1. McDonagh TA, Metra M, Adamo M, et al. 2021 ESC Guidelines for the diagnosis and treatment of acute and chronic heart failure. Eur Heart J. 2021;42(36):3599–3726
2. Bozkurt B, Coats AJS, Tsutsui H, et al. Universal definition and classification of heart failure. Eur Heart J. 2021;42(36):3613–3636.
3. Seferović PM, Fragasso G, Petrie M, et al. Heart failure association position paper on the role of primary care. Eur J Heart Fail. 2020.

Komunikacija s agresivnim pacijentom

Aleksandar Ljubotina[1], Maja Podvez[2]

1. Specijalistička ordinacija obiteljske medicine, Cambierieva 2, Rijeka
2. Zavod za vaskularnu kirurgiju Klinike za kirurgiju KBC Rijeka, T. Strižića 3, Rijeka

Ključne riječi: komunikacija, agresivni pacijent, obiteljski liječnik
Adresa za dopisivanje: nasl. doc. dr. sc. Aleksandar Ljubotina, dr. med., Specijalistička ordinacija obiteljske medicine dr Aleksandar Ljubotina, Cambierieva 2, 51000 Rijeka, Hrvatska
E adresa: alexandar_ljubotina@yahoo.com
ORCID: Aleksandar Ljubotina: 0000-0001-5077-7
Maja Podvez: 0009-0009-5686-9673

Uvod s ciljem: Komunikacija s agresivnim pacijentom je veliki izazov za obiteljske liječnike. Agresivnost pacijenata i njihovih obitelji se povećala u COVID-19 pandemiji, kada je prema istraživanju iz Velike Britanije, 40% liječnika doživjelo verbalnu ili fizičku agresiju. i više od 100 kontakata dnevno, što samo po sebi zahtijeva zavidnu komunikacijsku vještinu. Obiteljski liječnici imaju u prosjeku sedam minuta za konzultaciju s pacijentom, što je zgusnuto vrijeme i kada se radi o uobičajenom komunikaciji s pacijentom, a posebno kada se radi o agresivnom pacijentom. U kratkom vremenu liječnik treba pretpostaviti razloge pacijentove agresivnosti, smiriti situaciju suverenom i mirnom komunikacijom, uz predlaganje. alternativnih rješenja. Cilj rada je ukratko prikazati, za obiteljske liječnike, najučinkovitiji način komunikacije s agresivnim pacijentom.

Rasprava. Na početku komunikacije s agresivnim pacijentom ključno je provesti de-eskalaciju agresivnosti pacijenta. Liječnik i/ili medicinska sestra će na staložen način, mirnim glasom bez povišenih tonova, pozvati pacijenta da se smiri. Verbalnu komunikaciju će popratiti neverbalnom komunikacijom kojom će se naglasiti de-eskalacija agresivnosti, odnosno negativnih emocija. U suprotnom eskalacija agresivnosti pacijenta dovodi do nestabilnosti situacije. Nakon de-eskalacije agresivnosti valja se upoznati s razlogom agresivnosti pacijenta. To postižemo aktivnim slušanjem, svjesnim naporom da se razumije poruka i namjere koje stoje iza nje. Govorom tijela pokazujemo da smo uključeni. Održavamo kontakt očima, na prirodan način (ne zurimo), naginjemo se naprijed i koristimo otvorene geste (npr. okrenemo dlanove prema pacijentu i sl.). Ne prekidamo pacijenta, laganim kimanjem glavom potičemo ga da nastavi govoriti. Koristimo parafraziranje, povremeno ponovimo svojim riječima ono što smo čuli od pacijenta (npr. „Čini mi se da Vas je najviše naljutilo...”). Također koristimo otvorena pitanje (npr. „ Što bismo mogli učiniti da se osjećate bolje...”) Nastojimo prepoznati emocije koje stoje iza agresivnog ponašanja pacijenta i pokazati razumijevanje za razloge pacijentove agresivnosti. Na kraju komunikacije s agresivnim pacijentom, ponudit ćemo alternativna rješenja za problem, odnosno situaciju koja je uzrok agresivnom nastupu pacijenta, pazeći da ne narušimo pacijentovo samopoštovanje.

Zaključak. De-eskalacijom agresivnosti pacijenata, kroz aktivno slušanje i empatiju, uz davanje alternativnih rješenja kroz tehnike rješavanja problema, obiteljski liječnici mogu uspješno komunicirati s agresivnim pacijentima.

LITERATURA:

1. Haarwood R. How to deal with violent and aggressive patients in acute medical settings. J R Coll Physicians Edinb 2017; 47 (2): 94–101.
2. Gopal D, Hunter M, Butler D et al. Trauma-informed care: what does it mean for general practice? Br J Gen Pract 2023; 73 (730): 229–231.
3. Gunderman R, Gunderman P. Forty years since ‘taking care of the hateful patient’. AMA J Ethics 2017; 19 (4): 369–373.
4. Wu Q, Jin Z, Wang P. The relationship between the physician-patient relationship, physician empathy, and patient trust. J Gen Intern Med 2022; 37 (6): 1388–1393.
5. Lazris A, Roth A, Haskell H, James J. Poor physician–patient communication and medical error. Am Fam Physician 2021; 103 (12): 757–759.

Communication with an aggressive patient

Dragan Gjorgjievski[1]

1. PZU dr. Dragan Gjorgjievski

Keywords: communication, aggressive patient, family physician
Correspondence address: nasl. doc. dr. sc. Aleksandar Ljubotina, dr. med., Specijalistička ordinacija obiteljske medicine dr Aleksandar Ljubotina, Cambierieva 2, 51000 Rijeka, Hrvatska
E-mail: alexandar_ljubotina@yahoo.com
ORCID: Aleksandar Ljubotina: 0000-0001-5077-7
Maja Podvez: 0009-0009-5686-9673

Introduction with aim: Communicating with an aggressive patient is a major challenge for family doctors. Aggression among patients and their families has increased during the COVID-19 pandemic, when, according to a study from the United Kingdom, 40% of doctors have experienced verbal or physical aggression. Family doctors have an average of seven minutes to consult with a patient, which is a tight time even when it comes to normal communication with a patient, and especially when it comes to an aggressive patient. In a short time, the doctor needs to assume the reasons for the patient's aggression, calm the situation down with sovereign and calm communication, and propose alternative solutions. The aim of the paper is to briefly present, for family doctors, the most effective way of communicating with an aggressive patient.

Discussion: At the beginning of communication with an aggressive patient, it is crucial to de-escalate the patient's aggression. The doctor and/or nurse will calmly, in a calm voice without raised tones, invite the patient to calm down. Verbal communication will be accompanied by non-verbal communication that will emphasize the de-escalation of aggression, or negative emotions. Otherwise, the escalation of the patient's aggression leads to instability of the situation. After the de-escalation of aggression, it is necessary to get acquainted with the reason for the patient's aggression. We achieve this through active listening, a conscious effort to understand the message and the intentions behind it. We show our involvement with body language. We maintain eye contact, in a natural way (we do not stare), we lean forward and use open gestures (e.g., turn our palms towards the patient, etc.). We do not interrupt the patient, we encourage him to continue talking with a slight nod of the head. We use paraphrasing, occasionally repeating in our own words what we heard from the patient (e.g., "It seems to me that what angered you the most is..."). We also use open-ended questions (e.g., "What could we do to make you feel better...") We strive to recognize the emotions behind the patient's aggressive behavior and show understanding for the reasons for the patient's aggression. At the end of the communication with the aggressive patient, we will offer alternative solutions to the problem, or the situation that is the cause of the patient's aggressive behavior, taking care not to undermine the patient's self-esteem.

Conclusion. By de-escalating the patient's aggression, through active listening and empathy, and providing alternative solutions through problem-solving techniques, family physicians can successfully communicate with aggressive patients.

REFERENCES:

1. Haarwood R. How to deal with violent and aggressive patients in acute medical settings. J R Coll Physicians Edinb 2017; 47 (2): 94–101.
2. Gopal D, Hunter M, Butler D et al. Trauma-informed care: what does it mean for general practice? Br J Gen Pract 2023; 73 (730): 229–231.
3. Gunderman R, Gunderman P. Forty years since 'taking care of the hateful patient'. AMA J Ethics 2017; 19 (4): 369–373.
4. Wu Q, Jin Z, Wang P. The relationship between the physician-patient relationship, physician empathy, and patient trust. J Gen Intern Med 2022; 37 (6): 1388–1393.
5. Lazris A, Roth A, Haskell H, James J. Poor physician–patient communication and medical error. Am Fam Physician 2021; 103 (12): 757–759.

Komunikacija s umirućim pacijentom u obiteljskoj medicini

Leonardo Bukmir

Ključne riječi: komunikacija, teško oboljeli, umiranje
E adresa: leonardo.bukmir@gmail.com
ORCID: 0000-0002-1980-9665

Uvod s ciljem. Komunikacija s umirućim osobama i njihovim obiteljima predstavlja jedno od najizazovnijih područja u praksi liječnika obiteljske medicine.Kvalitetetna empatična komunikacia pomaže pacijentima da bolje razumiju svoju situaciju i pomaže u donošenju informiranih odluka o svom liječenju i kraju života. Cilj rada je istaknuti ulogu liječnika obiteljske i važnost adekvatne komunikacijske vještine u suočavanju sa smrću pacijenta i njihovih obitelji koja može značajno pridonijeti očuvanju dostojanstva, smanjenju patnje i jačanju osjećaja sigurnosti.

Rasprava. Umiranje i smrt složeni su i neizbježni procesi života, jedinstveni za svaku osobu. Vrijeme umiranja za mnoge osobe i obitelji je vrijeme krize , patnje ,straha i nesigurnosti.Većina ljudi želi, dostojanstveno umiranje pa je izrazito važno pružiti umirućoj osobi podršku u njezinoj tjelesnoj i psihološkoj neugodi. Ako osoba ne razumije situaciju i nije svjesna što se događa važno je na iskren i primjeren način objasniti joj kako bi mogla isplanirati svoje vrijeme, odluke i želje u posljednjim danima. Obiteljskom liječniku koji dugotrajno skrbi o opredjeljeim osobama poznavanje vrsta i sredstava komunikacije je neophodno, kako bi ih mogao primjereno koristiti, za dobru zdravstvenu skrb umirućeg bolesnika. Tijekom studija, pripravničkog staža i specijalizacije ne postoji formalna edukacija liječnika o komunikaciji s umiručim osobama, koja bi pomogla kod problema u praksi s kojima će se susretati. SPIKES protocol daje osnovne smjernice za postupno i empatično priopćavanje loših vijesti. Razgovor o smrti nije jednostavan. Predstavlja znatno emocionalno opterećenje za sve uključene. Izbjegavanje razgovora i šutnja mogu stvarati nepotrebnu napetost. Uspostavom primjerenog odnosa temeljenog na razumjevanju,empatiji,fleksibilnosti,aktivnom I potkrepljujućem slušanju uz uvažavanje pacijentovih želja , razgovor o smrti i umiranju na neki način može zbližiti bolesnika i ukućane ,omogučit im da dijele strahove , nadanja i lakše podnose situaciju u kojoj se nalaze. Način komunikacije s umirućom osobom potrebno je uskladiti s njihovim fizičkim i emocionalnim stanjem. Umiruća osoba može trebati i neverbalnu podršku, poput dodira, ili konkretnu pomoć, poput pisanja važnih poruka.U komunikaciji mogu se javiti i prepreke. Kod osobe najčešće su psihološke prirode i proizlaze iz straha,neizvjesnosti i emocionalnog opterećenja a kod liječnika su složene jer proizlaze iz dugotrajnog odnosa s pacijentom te uz manjak vremena, organizacijske poteškoće i nedovoljnu educiranost.

Zaključak: Komunikacija s umirućom osobom u obiteljskoj medicini predstavlja složen, ali iznimno važan aspekt zdravstvene skrbi.Dobra komunikacija s bolesnikom i njegovom obitelji temeljna je vještina obiteljskog liječnika koja donosi brojne koristi za bolesnika i obitelj.

LITERATURA:

1. World Health Organization. WHO definition of palliative care. Geneva: WHO; 2020.
2. European Association for Palliative Care. Communication in palliative care. Eur J Palliat Care. 2018;25(4):180–185.
3. Šamija M, Kovačević D. Palijativna medicina. Zagreb: Medicinska naklada; 2015.
4. Planinc-Peraica, Ana. Odnos liječnika prema bolesniku s malignom bolešću, u: Medicinska etika 1, ur. Znidarčić Ž, Centar za bioetiku, Filozofsko-teološki institut Družbe Isusove u Zagrebu, Zagreb 2004:103-112
5. Gomes B, Calanzani N, Gysels M, Hall S, Higginson IJ. Heterogeneity and changes in preferences for dying at home: a systematic review. BMC Palliat Care. 2013;12(1):7.

Communication with a dying patient in general practice

Leonardo Bukmir

Keywords: communication, severely ill, dying
E-mail: leonardo.bukmir@gmail.com
ORCID: 0000-0002-1980-9665

Introduction with Aim. Communication with dying patients and their families represents one of the most challenging areas in general practice. High-quality, empathetic communication helps patients better understand their situation and enables them to make informed decisions about their treatmenta nd end-of-life care. The aim of this paper is to highlight the role of general practitioners and the importance of adequate communication skills when dealing with dying patients and their families. Effectivec ommunication can significantly contribute to preserving dignity, reducing suffering, and strengthening a sense of security.

Discussion. Death and dying are complex and inevitable processes of life, unique to each individual. For many people and their families, the dying phase is a time of crisis, suffering, fear, and uncertainty. Most individuals wish to die with dignity; therefore, it is essential to support thedying person both physically and psychologically. If a person does not understand their situation or is not aware of what is happening, it is important to explain it honestly and appropriately so they can plan their remaining time, decisions, and wishes during their final days.In the case of general practitioners who provide long-term care for dependent patients, knowledge of communication methods and techniques is essential for delivering appropriate care at the end of life. However, during medical education, internships, and specialization, there is often no formal training in communication with dying patients. Such education would help physicians better manage the challenges they encounter in practice. The SPIKES protocol offers basic guidelines for the gradual and empathetic delivery of bad news. Talking about death is difficult and represents a significant emotional burden for everyone involved. Avoiding these conversations and remaining silent can create unnecessaryt ension.By establishing a relationship based on understanding, empathy, flexibility, and active, supportive listening, while respecting the patient's wishes, discussions about death and dying can bring patients and families closer together. This enables them to share fears and hopes and cope more easily with their situation. Communication with a dying person should be adapted to their physical and emotional condition. A patient may require nonverbal support, such as touch, or practical help, such as assistance in writing important messages. Various obstacles to communication may arise. These are most often psychological on the patient's side, stemming from fear, uncertainty, and emotional burden. On the physician's side, difficulties may result from long-term emotional involvement with the patient, lack of time, organizational challenges, and insufficient education.

Conclusion. Communication with a dying patient in general practice is a complex but extremely important aspect of healthcare. Effective communication with the patient and their family is a fundamental skill of the family doctor and brings significant benefits for both the patient and their loved ones.

REFERENCES:

1. World Health Organization. WHO definition of palliative care. Geneva: WHO; 2020.
2. European Association for Palliative Care. Communication in palliative care. Eur J Palliat Care. 2018;25(4):180–185.
3. Šamija M, Kovačević D. Palijativna medicina. Zagreb: Medicinska naklada; 2015.
4. Planinc-Peraica, Ana. Odnos liječnika prema bolesniku s malignom bolešću, u: Medicinska etika 1, ur. Znidarčić Ž, Centar za bioetiku, Filozofsko-teološki institut Družbe Isusove u Zagrebu, Zagreb 2004:103-112
5. Gomes B, Calanzani N, Gysels M, Hall S, Higginson IJ. Heterogeneity and changes in preferences for dying at home: a systematic review. BMC Palliat Care. 2013;12(1):7.

Komunikacija s nesuradljivim pacijentom

Snežana Knežević[1,2], Maja Vučković[2,3]

1. Katedra za medicinske nauke, Akademija strukovnih studija Politehnika, Beograd, Srbija
2. Sekcija opšte medicine Srpskog lekarskog društva
3. Dom zdravlja „Dr Milutin Ivković“, Beograd, Srbija

Ključne riječi: komunikacija, suradljivost pacijenta, motivacioni intervju, donošenje odluka
Adresa za dopisivanje: Snežana Knežević, Katarine Ambrozić 3, 11 000 Beograd, Srbija
E adresa: lesta59@yahoo.com
ORCID: Snežana Knežević: 0000-0001-9137-2122
Maja Vučković: 0000-0002-5977-724X

Uvod s ciljem. Komunikacija između zdravstvenog radnika i pacijenta predstavlja jedan od osnovnih stupova kvalitetne zdravstvene zaštite i ima presudan utjecaj na uspješnost dijagnostike, liječenja i rehabilitacije. Posebnu teškoću u svakodnevnoj praksi predstavlja komunikacija sa nesuradljivim pacijentima, čije ponašanje može obuhvaćati odbijanje preporučene terapije, neredovno pridržavanje medicinskih savjeta, izostajanje sa zakazanih kontrolnih pregleda ili otvoreno izražavanje sumnje i nepovjerenja prema zdravstvenom sustavu i zdravstvenim radnicima. Takvo ponašanje se često pogrešno tumači kroz izraz „teška ličnost“, iako je u većini slučajeva rezultat složenih emocionalnih, psiholoških i socijalnih faktora. Cilj ovog rada je identificirati i analizirati najčešće uzroke nesuradljivosti pacijenata, značaj motivacionog intervjua, kao i prikazati efikasne komunikacijske strategije koje mogu doprinijeti unapređenju suradnje, adherencije i terapijskih ishoda. Rad se zasniva na analizi relevantne domaće i međunarodne literature iz područja komunikacije u zdravstvenoj zaštiti.

Rasprava. Analiza literature ukazuje da nesuradljivost pacijenata najčešće predstavlja reakciju na strah, anksioznost i osjećaj gubitka kontrole, naročito u situacijama postavljanja dijagnoze, suočavanja sa kroničnim oboljenjem ili predlaganja invazivnih dijagnostičkih i terapijskih procedura. Nedostatak ili pogrešno razumijevanje zdravstvenih informacija dodatno doprinosi nesigurnosti i smanjenju spremnosti pacijenata na suradnju. Negativna prethodna iskustva sa zdravstvenim sistemom, prisustvo bola, kao i psihosocijalni, ekonomski, kulturni i vjerski faktori mogu dodatno produbiti otpor prema medicinskim preporukama. Kao posebno efikasne komunikacijske strategije izdvajaju se motivacioni intervu, aktivno slušanje, validacija osjećanja pacijenta, pružanje informacija koje su prilagođene pacijentu, provjera razumjevanja, empatičan i neosuđujući pristup, kao i uključivanje pacijenta u zajedničko donošenje odluka. Motivacioni intervju predstavlja strukturiran pristup koji kroz angažovanje, fokusiranje, pobuđivanje i planiranje omogućava pacijentu da prepozna i riješi ambivalentnost prema promjeni ponašanja. Ova tehnika je posebno učinkovita jer poštuje autonomiju pacijenta, istražuje njegove razloge za promjenu i izbjegava konfrontaciju. Transteoretski model faza promjene (prekontemplacija, kontemplacija, priprema, akcija, održavanje, terminacija) omogućava zdravstvenom radniku da prilagodi komunikacijski pristup stadiju spremnosti nesuradljivog pacijenta na promjenu, što povećava učinkovitost intervencije. Postepeno građenje povjerenja kroz partnerstvo, prihvatanje, saosećanje i pobuđivanje prepoznaju se kao ključni uvjet uspješne suradnje.

Zaključak. Uspješna komunikacija sa nesuradljivim pacijentom zahtjeva kombinaciju profesionalnih vještina, emocionalne inteligencije i strpljenja. Nesuradljivost pacijenata se mora promatrati kao komunikacijski izazov, a ne kao lični napad. Pacijentu treba pokazati da je njegova dobrobit prioritet u radu. To se nadilazi aktivnim slušanjem, empatijom i razumjevanjem, jasnim i prilagođenim objašnjenjima, uključivanjem pacijenta u donošenje odluka, kontrolom emocija zdravstvenog radnika, postepenim građenjem povjerenja uz dosljedno ispunjavanje obećanja i dogovora. Primjena motivacionog intervjua omogućuje da nesuradljivi pacijenti prepoznaju potrebu za promjenom, čime se povećava dugoročna adherencija. Ovim se unapređuju ishodi liječenja i zadovoljstvo svih, s posebnim naglaskom na nesuradljive pacijente, uz jačanje međusobnog povjerenja i profesionalnog odnosa sa zdravstvenim radnicima.

LITERATURA:

1. Lawrence MM, Ramirez RP, Bauer PJ. Communicating With Unconscious Patients: An Overview. Dimens Crit Care Nurs. 2023;42(1):3-11. doi:10.1097/DCC.0000000000000561
2. Kleinsinger F. Working with the noncompliant patient. Perm J. 2010;14(1):54-60. doi:10.7812/TPP/09-064
3. Tian Y, Zhang J, Che H, Su Y. Weaving rapport: doctors' strategies towards patients' noncompliance. BMC Health Serv Res. 2023;23(1):14. doi:10.1186/s12913-022-08947-7
4. Hildenbrand GM, Perrault EK, Rnoh RH. Patients' Perceptions of Health Care Providers' Dismissive Communication. Health Promot Pract. 2022;23(5):777-784. doi:10.1177/15248399211027540
5. Cox C, Fritz Z. Presenting complaint: use of language that disempowers patients. BMJ. 2022;377:e066720. doi:10.1136/bmj-2021-066720

Communication with a noncompliant patient

Snežana Knežević[1,2], Maja Vučković[2,3]

1. Department of Medical Sciences, Academy of Applied Studies Polytechnic, Belgrade, Serbia
2. Section of General Practice of Serbian Medical Society, Belgrade, Serbia
3. Health Care Center "Dr Milutin Ivković", Belgrade, Serbia

Keywords: communication, patient compliance, motivational interviewing, decision-making
Correspondence address: Snežana Knežević, Katarine Ambrozić 3, 11 000 Beograd, Srbija
E-mail: lesta59@yahoo.com
ORCID: Snežana Knežević: 0000-0001-9137-2122
Maja Vučković: 0000-0002-5977-724X

Introduction with aim. Communication between healthcare providers and patients represents one of the fundamental pillars of quality healthcare and has a decisive impact on the success of diagnostics, treatment, and rehabilitation. Communication with non-adherent patients presents a particular difficulty in everyday practice, whose behavior may include refusing recommended therapy, irregular adherence to medical advice, missing scheduled follow-up appointments, or openly expressing doubt and distrust toward the healthcare system and healthcare professionals. Such behavior is often incorrectly interpreted through the term "difficult personality," although in most cases it is the result of complex emotional, psychological, and social factors. This paper aims to identify and analyze the most common causes of patient non-adherence, the significance of motivational interviewing, and to present effective communication strategies that can contribute to improving cooperation, adherence, and therapeutic outcomes. The paper is based on an analysis of relevant domestic and international literature in the field of healthcare communication.

Discussion. Literature analysis indicates that patient non-adherence most often represents a reaction to fear, anxiety, and feelings of loss of control, particularly in situations of diagnosis, confronting chronic illness, or proposing invasive diagnostic and therapeutic procedures. Lack of or incorrect understanding of health information additionally contributes to uncertainty and reduced patient willingness to cooperate. Negative previous experiences with the healthcare system, presence of pain, as well as psychosocial, economic, cultural, and religious factors, can further deepen resistance to medical recommendations. Particularly effective communication strategies include motivational interviewing, active listening, validation of patient feelings, providing information adapted to the patient, verification of understanding, an empathic and non-judgmental approach, and involving the patient in shared decision-making. Motivational interviewing represents a structured approach that, through engaging, focusing, evoking, and planning, enables the patient to recognize and resolve ambivalence toward behavioral change. This technique is particularly effective because it respects patient autonomy, explores their reasons for change, and avoids confrontation. The Transtheoretical Model of Change (precontemplation, contemplation, preparation, action, maintenance, termination) enables healthcare providers to adapt their communication approach to the stage of the non-adherent patient's readiness for change, which increases intervention effectiveness. Gradual building of trust through partnership, acceptance, compassion, and evocation is recognized as a key condition for successful cooperation.

Conclusion. Successful communication with non-adherent patients requires a combination of professional skills, emotional intelligence, and patience. Patient non-adherence must be viewed as a communication challenge, not as a personal attack. Patients need to be shown that their well-being is a priority in care. This is achieved through active listening, empathy and understanding, clear and adapted explanations, involving patients in decision-making, controlling healthcare provider emotions, and gradually building trust with consistent fulfillment of promises and agreements. Application of motivational interviewing enables non-adherent patients to recognize the need for change themselves, which increases long-term adherence. This improves treatment outcomes and satisfaction of all, with particular emphasis on non-adherent patients, while strengthening mutual trust and professional relationships with healthcare providers.

REFERENCES:

1. Lawrence MM, Ramirez RP, Bauer PJ. Communicating With Unconscious Patients: An Overview. Dimens Crit Care Nurs. 2023;42(1):3-11. doi:10.1097/DCC.0000000000000561
2. Kleinsinger F. Working with the noncompliant patient. Perm J. 2010;14(1):54-60. doi:10.7812/TPP/09-064
3. Tian Y, Zhang J, Che H, Su Y. Weaving rapport: doctors' strategies towards patients' noncompliance. BMC Health Serv Res. 2023;23(1):14. doi:10.1186/s12913-022-08947-7
4. Hildenbrand GM, Perrault EK, Rnoh RH. Patients' Perceptions of Health Care Providers' Dismissive Communication. Health Promot Pract. 2022;23(5):777-784. doi:10.1177/15248399211027540
5. Cox C, Fritz Z. Presenting complaint: use of language that disempowers patients. BMJ. 2022;377:e066720. doi:10.1136/bmj-2021-066720

Hipertenzija: Kako premostiti jaz između znanja i primjene u kliničkoj praksi

Ines Diminić Lisica[1,2]

1. Katedra za obiteljsku medicinu, Medicinski fakultet, Sveučilište u Rijeci
2. Ustanova za zdravstvenu skrb "dr Ines Diminić Lisica", Rijeka

Ključne riječi: arterijska hipertenzija; klinička praksa; implementacija smjernica; jaz znanje–praksa
Adresa za dopisivanje: Ines Diminić Lisica, Braće Branchetta 20, Rijeka
E adresa: ines.diminic.lisica@uniri.hr
ORCID: 0000-0003-1981-1957

Uvod: Hipertenzija i dalje predstavlja najznačajniji javno zdravstveni izazov i ostaje vodeći promjenjivi čimbenika kardiovaskularnog (KV) rizika. Unatoč dostupnosti učinkovitih lijekova te jasnih i na dokazima utemeljenih smjernica za dijagnostiku i liječenje, u svakodnevnoj kliničkoj praksi značajan dio (75-80%) bolesnika ne postiže ciljne vrijednosti arterijskog tlaka što ukazuje na postojanje izraženog jaza između teorijskog znanja i njegove primjene. Cilj ovog rada je analiza uzroka nepostizanja zadovoljavajuće regulacije arterijske hipertenzije te donošenje ključnih preporuke za smanjenje jaza između znanja i primjene u kliničkoj praksi.

Rasprava: Tijekom 2023. te 2024. godine. objavljene su nove europske smjernice za liječenje arterijske hipertenzije od strane Europskog društva za hipertenziju (ESH) i Europskog kardiološkog društva (ESC). Smjernice oba društva značajno pojednostavljuju postupak u svakodnevnoj praksi. Razlozi nepostizanja zadovoljavajućih rezultata vezanih za regulaciju arterijske hipertenzije u kliničkoj praksi višeslojni su i uključuju nedostatnu adherenciju bolesnika, kliničku i terapijsku inerciju s nejasno definiranom dinamikom vođenja bolesnika, nedovoljnu individualizaciju liječenja te ograničenja zdravstvenog sustava i socio-ekonomske faktore. U dosljednoj primjeni smjernica važno je naglasiti kućno i kontinuirano 24-satno mjerenje arterijskog tlaka, pravovremeni početak liječenja i rano uvođenje kombinirane antihipertenzivne terapije, kao i o značaj nefarmakoloških mjera koje se u praksi često zanemaruju. Neophodan je jasno definiran plan liječenja i aktivno uključivanje bolesnika u proces liječenja, unapređenje komunikacije te korištenje jednostavnih i jasnih terapijskih algoritama.

Zaključak: Arterijska hipertenzija nije primarno problem nedostatka znanja, već implementacije postojećih preporuka u realnim kliničkim uvjetima. Sustavni, pragmatični i timski pristup, prilagođen individualnom bolesniku, može značajno doprinijeti poboljšanju kontrole arterijskog tlaka i smanjenju KV rizika u širokoj populaciji. Ovakav pristup zahtijeva kadrovski i organizacijski snažnu primarnu zdravstvenu zaštitu te sustavnu javno-zdravstvenu strategiju.

LITERATURA:

1. Kreutz R, Brunström M, Burnier M, et al.. 2024 European Society of Hypertension clinical practice guidelines for the management of arterial hypertension. Eur J Intern Med. 2024;126:1-15. doi: 10.1016/j.ejim.2024.05.033.
2. Mc Evoy JW, McCarthy CP, Bruno RM, et al; ESC Scientific Document Group. 2024 ESC Guidelines for the management of elevated blood pressure and hypertension. Eur Heart J. 2024;45(38):3912-4018. doi: 10.1093/eurheartj/ehae178. Erratum in: Eur Heart J. 2025;46(14):1300. doi: 10.1093/eurheartj/ehaf031. Erratum in: Eur Heart J. 2025;46(45):4949. doi: 10.1093/eurheartj/ehaf659.
3. Elnaem MH, Mosaad M, Abdelaziz DH, et al. Disparities in Prevalence and Barriers to Hypertension Control: A Systematic Review. Int J Environ Res Public Health. 2022;19(21):14571. doi: 10.3390/ijerph192114571.
4. Mancia G, Cappuccio FP, Burnier Met al. Perspectives on improving blood pressure control to reduce the clinical and economic burden of hypertension. J Intern Med. 2023;294(3):251-268. doi: 10.1111/joim.13678.
5. Tomasino C, Tomasino M. Medication adherence and non-adherence in arterial hypertension: a narrative review. Explor Med. 2025;6:1001276. https://doi.org/10.37349/emed.2025.1001276

Hypertension: Bridging the gap between knowledge and its implementation in clinical practice

Ines Diminić Lisica[1,2]

1. The Faculty of Medicine of the University of Rijeka
2. Health institution dr Ines Diminić Lisica, Rijeka

Keywords: arterijska hipertenzija; klinička praksa; implementacija smjernica; jaz znanje–praksa
Correspondence address: Ines Diminić Lisica, Braće Branchetta 20, Rijeka
E-mail: ines.diminic.lisica@uniri.hr
ORCID: 0000-0003-1981-1957

Introduction: Hypertension continues to represent the most significant public health challenge and remains the leading modifiable cardiovascular (CV) risk factor. Despite the availability of effective drugs and clear and evidence-based guidelines for diagnosis and treatment, a significant proportion (75-80%) of patients in everyday clinical practice do not achieve target blood pressure values, which indicates the existence of a pronounced gap between theoretical knowledge and its implementation. The aim of this paper is to analyze the causes of failure to achieve satisfactory regulation of arterial hypertension and bring key recommendations for reducing the gap between knowledge and implementation in clinical practice

Discussion: During 2023 and 2024, new european guidelines for the treatment of arterial hypertension were published by the European Society of Hypertension (ESH) and the European Society of Cardiology (ESC). The guidelines of both societies significantly simplify the procedure in everyday practice. The reasons for not achieving satisfactory results related to the regulation of arterial hypertension in clinical practice are multifaceted and include insufficient patient adherence, clinical and therapeutic inertia with unclearly defined dynamics of patient management, insufficient individualization of treatment, and limitations of the health system and socio-economic factors.

In the consistent application of the guidelines, it is important to emphasize home and continuous 24-hour blood pressure measurement, timely initiation of treatment and early introduction of combined antihypertensive therapy, as well as the importance of non-pharmacological measures that are often neglected in practice.

A clearly defined treatment plan and active patient involvement in the treatment process are necessary, through improved communication and the use of simple and clear therapeutic algorithms.

Conclusion: Arterial hypertension is not primarily a problem of lack of knowledge, but rather the implementation of existing recommendations in real clinical conditions. A systematic, pragmatic and team approach, tailored to the individual patient, can significantly contribute to improving blood pressure control and reducing CV risk in the general population. This approach requires a strong primary health care system in terms of personnel and organization, and a systematic public health strategy.

REFERENCES:

1. Kreutz R, Brunström M, Burnier M, et al.. 2024 European Society of Hypertension clinical practice guidelines for the management of arterial hypertension. Eur J Intern Med. 2024;126:1-15. doi: 10.1016/j.ejim.2024.05.033.
2. Mc Evoy JW, McCarthy CP, Bruno RM, et al; ESC Scientific Document Group. 2024 ESC Guidelines for the management of elevated blood pressure and hypertension. Eur Heart J. 2024;45(38):3912-4018. doi: 10.1093/eurheartj/ehae178. Erratum in: Eur Heart J. 2025;46(14):1300. doi: 10.1093/eurheartj/ehaf031. Erratum in: Eur Heart J. 2025;46(45):4949. doi: 10.1093/eurheartj/ehaf659.
3. Elnaem MH, Mosaad M, Abdelaziz DH, et al. Disparities in Prevalence and Barriers to Hypertension Control: A Systematic Review. Int J Environ Res Public Health. 2022;19(21):14571. doi: 10.3390/ijerph192114571.
4. Mancia G, Cappuccio FP, Burnier Met al. Perspectives on improving blood pressure control to reduce the clinical and economic burden of hypertension. J Intern Med. 2023;294(3):251-268. doi: 10.1111/joim.13678.
5. Tomasino C, Tomasino M. Medication adherence and non-adherence in arterial hypertension: a narrative review. Explor Med. 2025;6:1001276. https://doi.org/10.37349/emed.2025.1001276

Hipertenzija- terapijski pristup određenim skupinama u populaciji

Branislava Popović[1]

1. Katedra za obiteljsku medicinu Medicinskog fakulteta Sveučilišta u Rijeci, HR

Ključne riječi: hipertenzija, krhkost, kronična bubrežna bolest, smjernice, starije osobe
Adresa za dopisivanje: izv. prof. dr. sc. Branislava Popović dr. med., Katedra za obiteljsku medicinu, Medicinski fakultet, Sveučilišta u Rijeci, Braće Branchetta 20, 51000 Rijeka, Hrvatska
E adresa: branislava.popovic@ri.t-com.hr
ORCID: 0000-0003-1671-7957

Uvod s ciljem. Relevantne smjernice za arterijsku hipertenziju naglašavaju da se ciljne vrijednosti arterijskog tlaka moraju individualizirati uzimajući u obzir potencijalne koristi i rizike za bolesnika. Cilj ovog rada je ukazati na terapijski pristup liječnika obiteljske medicine (LOM) pojedinim skupinama u populaciji koje mogu imati veći rizik nuspojava u postizanju preporučenih ciljnih vrijednosti krvnog tlaka.

Metode. Pretražena je baza Pubmed prema ključnim riječima u zadnje dvije godine, s naglaskom na najnovije preporuke za određene skupine u općoj populaciji .

Rasprava. Rezultati velikih kliničkih studija pokazali su da intenzivno snižavanje krvnog tlaka smanjuje rizik od kardiovaskularnih (KV) događaja. Potrebno je razmotriti mogućnost postavljanja nižih ciljnjih vrijednosti temeljenjem procjene ukupnog kardiovaskularnog rizika, funkcionalnog statusa i očekivanog životnog vijeka bolesnika. U starijih osoba, bolesnika s kroničnom bubrežnom bolesti (KBB), sindromom krhkosti, ortostatskom hipotenzijom, značajnim komorbiditetima treba pažljivo procijenjivati rizik od potencijalnih nuspojava antihipertenziva . Meta-analize potvrđuju da je ciljni sistolički tlak <130 mmHg kod starijih povezan s nižom stopom ukupne smrtnosti i kardiovaskularnih događaja, pri čemu rizik od ozbiljnih nuspojava antihipertenzivima ostaje nepromijenjen. U bolesnika s komorbiditetima, KBB, srčanom insuficijencijom ili dijabetesom, češće nuspojave su hipotenzija i akutna bubrežna ozljeda. Najnovije smjernice Europskog kardiološkog društva (ESC) 2024. godine preporučuju početnu vrijednost sistoličkog tlaka 120–129 mmHg, uz mogućnost povećanja vrijednosti kod: izražene krhkosti, u osoba ≥85 godina, onih s ograničenim životnim vijekom. Stručno društvo američkih kardiologa u 2025. godini naglašava da je ciljni tlak <130/80 mmHg optimalan za većinu, uz poticanje na daljnje snižavanje sistoličkog tlaka prema <120 mmHg, ako to bolesnik dobro podnosi. Za osobe s KBB, relevantne smjernice preporučuju ciljni sistolični krvni tlak <120 mm Hg. Nedavni Cochraneov pregled otkrio je da niži ciljni krvni tlak (≤130/80 mm Hg) u usporedbi sa standardnim ciljevima vjerojatno rezultira malom ili nikakvom razlikom u ukupnoj smrtnosti, ozbiljnim nuspojavama ili progresiji do završne faze bubrežne bolesti. Većina antihipertenzivnih lijekova ima slične ukupne kardiovaskularne koristi kod krhkih starijih pacijenata i onih s uznapredovalom KBB, no profili nuspojava se razlikuju. Uporaba tiazidnih diuretika često je povezana s hipokalemijom, hiponatrijemijom i povećanim rizikom od padova. Diuretici Henleove petlje mogu izazvati smanjenje volumena i ortostatsku hipotenziju. Beta-blokatori i periferni alfa-blokatori povezani su s većim stopama ortostatske hipotenzije kod starijih odraslih osoba. Blokatori kalcijevih kanala (osobito amlodipin) mogu povećati kratkoročni rizik od pada, pokazalo se da amlodipin povećava padove unutar prve godine od početka uzimanja kod starijih Inhibitori renin-angiotenzinskog sustava (ACEI/ARB) općenito se dobro podnose i preferiraju kod KBB, ali nisu superiorniji od drugih klasa lijekova za održavanje eGFR-a u ranoj KBB. U kombinacije s diureticima ili nitratima mogu povećati rizik od ortostatske hipotenzije kod starijih s demencijom.

Zaključak. U svakodnevnoj praksi LOM optimalni pristup uključuje individualizaciju ciljeva, s naglaskom na sigurnost i kliničku korist za svakog bolesnika. Redovito praćenje nuspojava i prilagodba terapije važna je za planiranje liječenja s ciljem održanja funkcionalnog statusa i postizanja dobre kvalitete života.

LITERATURA:

1. Guasti L, Ambrosetti M, Ferrari M, Marino F, Ferrini M, Sudano I, Tanda ML, Parrini I, Asteggiano R, Cosentino M. Management of Hypertension in the Elderly and Frail Patient. Drugs Aging. 2022 Oct;39(10):763-772. doi: 10.1007/s40266-022-00966-7. Epub 2022 Jul 29. PMID: 35904720; PMCID: PMC9553775.
2. Wu PS, Chao CT, Hsiao CH, Yang CF, Lee YH, Lin HJ, Yeh CF, Lee LT, Huang KC, Lee MC, Huang CK, Lin YH, Chen MY, Chan DC. Blood pressure targets, medication consideration and unique concerns in elderly hypertension IV: Focus on frailty, orthostatic hypotension, and resistant hypertension. J Formos Med Assoc. 2025 Jul;124 Suppl 1:S63-S69. doi: 10.1016/j.jfma.2024.09.022. Epub 2024 Oct 5. PMID: 39370367.
3. Jones DW, Ferdinand KC, et al.2025 AHA/¬ACC/¬AANP/¬AAPA/¬ABC/¬ACCP/¬ACPM/¬AGS/¬AMA/¬ASPC/¬NMA/-PCNA/¬SGIM Guideline for the Prevention, Detection, Evaluation and Management of High Blood Pressure in Adults: A Report of the American College of Cardiology/¬American Heart Association Joint Committee on Clinical Practice Guidelines.Circulation. 2025;152(11):e114-e218. doi:10.1161/CIR.0000000000001356.
4. Falk JM, Froentjes L, Kirkwood JE, Heran BS, Kolber MR, Allan GM, Korownyk CS, Garrison SR. Higher blood pressure targets for hypertension in older adults. Cochrane Database Syst Rev. 2024 Dec 17;12(12):CD011575. doi: 10.1002/14651858.CD011575.pub3. PMID: 39688187; PMCID: PMC11650777.
5. KDIGO 2025 Clinical practice guideline for the evaluation, management,and treatment of autosomal dominant polycystic kidney disease (ADPKD) Dostupno na:https://kdigo.org/wp-content/uploads/2025/01/KDIGO-2025-ADPKD-Guideline.pdf. Pristupljeno:18.1 2026.

Hypertension - therapeutic approach to specific groups in the population

Branislava Popović[1]

1. Department of Family Medicine, Faculty of Medicine, University of Rijeka, HR

Keywords: chronic kidney disease, elderly, frailty, guidelines, hypertension
Correspondence address: izv. prof. dr. sc. Branislava Popović dr. med., Katedra za obiteljsku medicinu, Medicinski fakultet, Sveučilišta u Rijeci, Braće Branchetta 20, 51000 Rijeka, Hrvatska
E-mail: branislava.popovic@ri.t-com.hr
ORCID: 0000-0003-1671-7957

Introduction with aim. Relevant guidelines for arterial hypertension emphasise that target blood pressure values must be individualised, taking into account the potential benefits and risks for the patient. This paper aims to indicate the therapeutic approach of general practitioners (GPs) to specific groups in the population who may have a higher risk of side effects in achieving the recommended target blood pressure values.

Methods. Pubmed was searched for keywords in the last two years, with an emphasis on the latest recommendations for specific groups in the general population.

Discussion. Results from large clinical trials have shown that intensive blood pressure lowering reduces the risk of cardiovascular (CV) events. It is necessary to consider the possibility of setting lower target values based on an assessment of the patient's overall cardiovascular risk, functional status and life expectancy. In elderly patients with chronic kidney disease (CKD), frailty syndrome, orthostatic hypotension, and significant comorbidities, the risk of potential side effects of antihypertensive drugs should be carefully assessed. Meta-analyses confirm that a target systolic pressure <130 mmHg in the elderly is associated with a lower rate of overall mortality and cardiovascular events, while the risk of serious side effects of antihypertensive drugs remains unchanged. In patients with comorbidities, CKD, heart failure or diabetes, hypotension and acute kidney injury are more common side effects. The latest 2024 European Society of Cardiology (ESC) guidelines recommend a starting systolic blood pressure of 120–129 mmHg, with the option of increasing the value in individuals who are frail, those aged 85 years or older, or those with limited life expectancy. The 2025 American College of Cardiology guidelines emphasise that a target blood pressure of <130/80 mmHg is optimal for most people, with further reductions to <120 mmHg encouraged if tolerated. For people with CKD, the relevant guidelines recommend a target systolic blood pressure of <120 mm Hg. A recent Cochrane review found that lower blood pressure targets (≤130/80 mm Hg) compared with standard targets probably result in little or no difference in overall mortality, serious adverse events, or progression to end-stage renal disease. Most antihypertensive drugs have similar overall cardiovascular benefits in frail elderly patients and those with advanced CKD, but their adverse event profiles differ. Thiazide diuretic use is frequently associated with hypokalemia, hyponatremia, and an increased risk of falls. Loop diuretics can cause volume depletion and orthostatic hypotension. Beta-blockers and peripheral alpha-blockers are associated with higher rates of orthostatic hypotension in older adults. Calcium channel blockers (particularly amlodipine) may increase the short-term risk of falls, and amlodipine has been shown to increase falls within the first year of initiation in older adults. Renin-angiotensin system inhibitors (ACEIs/ARBs) are generally well tolerated and preferred in CKD, but are not superior to other classes of drugs for maintaining eGFR in early CKD. They may increase the risk of orthostatic hypotension in older adults with dementia when combined with diuretics or nitrates.

Conclusion. In daily practice, the optimal approach for GPs involves individualising treatment goals, with an emphasis on safety and clinical benefit for each patient. Regular monitoring for adverse events and adjustments to therapy are crucial for planning treatment, intending to maintain functional status and achieve a high quality of life.

REFERENCES:

1. Guasti L, Ambrosetti M, Ferrari M, Marino F, Ferrini M, Sudano I, Tanda ML, Parrini I, Asteggiano R, Cosentino M. Management of Hypertension in the Elderly and Frail Patient. Drugs Aging. 2022 Oct;39(10):763-772. doi: 10.1007/s40266-022-00966-7. Epub 2022 Jul 29. PMID: 35904720; PMCID: PMC9553775.
2. Wu PS, Chao CT, Hsiao CH, Yang CF, Lee YH, Lin HJ, Yeh CF, Lee LT, Huang KC, Lee MC, Huang CK, Lin YH, Chen MY, Chan DC. Blood pressure targets, medication consideration and unique concerns in elderly hypertension IV: Focus on frailty, orthostatic hypotension, and resistant hypertension. J Formos Med Assoc. 2025 Jul;124 Suppl 1:S63-S69. doi: 10.1016/j.jfma.2024.09.022. Epub 2024 Oct 5. PMID: 39370367.
3. Jones DW, Ferdinand KC, et al.2025 AHA/¬ACC/¬AANP/¬AAPA/¬ABC/¬ACCP/¬ACPM/¬AGS/¬AMA/¬ASPC/¬NMA/-PCNA/¬SGIM Guideline for the Prevention, Detection, Evaluation and Management of High Blood Pressure in Adults: A Report of the American College of Cardiology/¬American Heart Association Joint Committee on Clinical Practice Guidelines.Circulation. 2025;152(11):e114-e218. doi:10.1161/CIR.0000000000001356.
4. Falk JM, Froentjes L, Kirkwood JE, Heran BS, Kolber MR, Allan GM, Korownyk CS, Garrison SR. Higher blood pressure targets for hypertension in older adults. Cochrane Database Syst Rev. 2024 Dec 17;12(12):CD011575. doi: 10.1002/14651858.CD011575.pub3. PMID: 39688187; PMCID: PMC11650777.
5. KDIGO 2025 Clinical practice guideline for the evaluation, management,and treatment of autosomal dominant polycystic kidney disease (ADPKD) Dostupno na:https://kdigo.org/wp-content/uploads/2025/01/KDIGO-2025-ADPKD-Guideline.pdf. Pristupljeno:18.1 2026.

Hipertenzija u trudnica: uloga liječnika obiteljske medicine

Vedrana Tudor Špalj[1,2]

1. Sveučilište u Rijeci, Medicinski fakultet, Katedra za obiteljsku medicinu, Rijeka, Hrvatska
2. Dom zdravlja Primorsko-goranske županije, Rijeka, Hrvatska

Ključne riječi: arterijska hipertenzija i trudnoća;obiteljska medicina
Adresa za dopisivanje: Vedrana Tudor Špalj, Sveučilište u Rijeci, Medicinski fakultet, Katedra za obiteljsku medicinu, B.Branchetta 20, 51000 Rijeka, Hrvatska
E adresa: tudorvedrana@gmail.com
ORCID: 0009-0008-0644-4178

Uvod s ciljem: Kronična i gestacijska hipertenzija, s vrijednostima tlaka većim od 140/90mm/Hg, predstavljaju značajan zdravstveni izazov. Pravovremena prilagodba terapije na početku trudnoće i redovito praćenje omogućuju smanjenje rizika od ozbiljnih komplikacija. Cilj ovog kratkog rada jest bolje upoznavanje liječnika obiteljske medicine s hipertenzijom u trudnica te s postupcima u zbrinjavanju ovog izazovnog stanja.

Rasprava: Udio hipertenzivnih poremećaja u trudnoći čini 5–10 % svih trudnoća.(1) Kronična hipertenzija može biti prisutna prije trudnoće ili dijagnosticirana prije 20. tjedna, dok se gestacijska hipertenzija razvija nakon 20. tjedna trudnoće. Obje vrste hipertenzije povećavaju rizik od smrti i komplikacija za majku i fetus, uključujući preeklampsiju, prijevremeni porod i fetalne poremećaje, što zahtijeva pažljivo praćenje i liječenje. Hipertenzivna emergencija u trudnica predstavlja izmjereni arterijski tlak ≥160/110 i zahtjeva bolničko liječenje. Žene s kroničnom hipertenzijom često su na antihipertenzivnoj terapiji već prije trudnoće. Međutim, brojni lijekovi, poput ACE inhibitora i blokatora angiotenzinskih receptora, kontraindicirani su u trudnoći zbog štetnog učinka na plod te ih je potrebno zamijeniti unutar dva dana od saznanja trudnoće sigurnijim alternativama, kao što su metildopa, nifedipin ili labetalol. Trudnicama s visokim rizikom (hipertenzija u prethodnoj trudnoći, kronična bubrežna bolest, autoimune bolesti poput sistemskog lupusa i antifosfolipidnog sindroma, šećerna bolest tipa 1 i 2 te kronična hipertenzija), kao i onima s više od jednog umjerenog rizičnog čimbenika (prva trudnoća, dob ≥40 godina, razmak ≥10 godina od prethodne trudnoće, BMI ≥35 kg/m², pozitivna obiteljska anamneza, višeplodna trudnoća), preporučuje se primjena 75–150 mg acetilsalicilne kiseline dnevno od 12. tjedna trudnoće do poroda. Redovito praćenje krvnog tlaka i fetalnog stanja ključno je za pravodobno otkrivanje i prevenciju komplikacija. Postporođajno praćenje krvnog tlaka od osobite je važnosti zbog povećanog rizika razvoja trajne hipertenzije i drugih kardiovaskularnih bolesti. Preporučuje se češće mjerenje krvnog tlaka tijekom prva dva dana nakon poroda, zatim jednom dnevno do petog dana, uz mogućnost prilagodbe terapije. Metildopu, ako je korištena tijekom trudnoće, potrebno je zamijeniti unutar dva dana nakon poroda, ako je tlak i dalje povišen, na terapiju koja je bila prije trudnoće. Nadalje, indicirana je kontrola krvnog tlaka 6–8 tjedana nakon poroda uz reviziju postojeće terapije. Liječenje hipertenzije u trudnoći provodi se na sekundarnoj razini zdravstvene zaštite, u domeni nefrologa.

Zaključak: Upravljanje hipertenzijom u trudnoći ključno je za očuvanje zdravlja majke i fetusa. Liječnik obiteljske medicine sudjeluje u zbrinjavanju trudnice koja se javi u ordinaciju s arterijskom hipertenzijom, prilagođavajući terapiju na početku trudnoće ako trudnica koristi lijekove poput ACE inhibitora ili blokatora angiotenzinskih receptora, te upućivanjem u sekundarnu zdravstvenu zaštitu. Postporođajno praćenje predstavlja sastavni dio skrbi, budući da žene s hipertenzijom u trudnoći zahtijevaju dugotrajni nadzor zbog povećanog rizika od razvoja kardiovaskularnih bolesti u kasnijem životu.

LITERATURA:

1. Dika Ž, et al. Kliničke smjernice za dijagnostiku i liječenje kardiovaskularnih bolesti u postmenopauzi, tijekom trudnoće i drugim ginekološkim stanjima. Medix. 2021 Dec;27:150–151.
2. Bramham K, Parnell B, Nelson-Piercy C, Seed PT, Poston L, Chappell LC. Chronic hypertension and pregnancy outcomes: systematic review and meta-analysis. BMJ 2014;348:g2301.
3. Lowe SA, Bowyer L, Lust K, McMahon LP, Morton M, North RA, et al. SOMANZ guidelines for the management of hypertensive disorders of pregnancy 2014. Aust N Z J Obstet Gynaecol 2015;55:e1-2948–152.
4. National Institute for Health and Care Excellence (NICE). Hypertension in pregnancy: diagnosis and management. NICE guideline [NG133]. London: NICE; 2019 Jun 25.
5. Beech A., Mangos G. Management of hypertension in pregnancy, Aust Prescr. 2021,44:1

Hypertension in Pregnant Women: The Role of the Family Physician

Vedrana Tudor Špalj[1,2]

1. University of Rijeka, Faculty of Medicine, Department of Family Medicine, Rijeka, Croatia
2. Health Center of Primorje-Gorski Kotar County, Rijeka, Croatia

Keywords: arterial hypertension and pregnancy; family medicine
Correspondence address: Vedrana Tudor Špalj, Sveučilište u Rijeci, Medicinski fakultet, Katedra za obiteljsku medicinu, B.Branchetta 20, 51000 Rijeka, Hrvatska
E-mail: tudorvedrana@gmail.com
ORCID: 0009-0008-0644-4178

Introduction and Aim: Chronic and gestational hypertension, defined as blood pressure values above 140/90 mmHg, represent a significant health challenge. Timely therapy adjustment at the beginning of pregnancy and regular monitoring can reduce the risk of serious complications. The aim of this short paper is to familiarize family physicians with hypertension in pregnant women and the management of this challenging condition.

Discussion: Hypertensive disorders affect 5–10% of all pregnancies. Chronic hypertension may be present before pregnancy or diagnosed before the 20th week, whereas gestational hypertension develops after the 20th week. Both types increase maternal and fetal risk of mortality and complications, including preeclampsia, preterm birth, and fetal disturbances, requiring careful monitoring and treatment. Hypertensive emergencies in pregnancy are defined as measured blood pressure ≥160/110 mmHg and require hospital care. Women with chronic hypertension are often already on antihypertensive therapy before pregnancy. However, many medications, such as ACE inhibitors and angiotensin receptor blockers, are contraindicated during pregnancy due to fetal toxicity and must be replaced within two days of pregnancy confirmation with safer alternatives, such as methyldopa, nifedipine, or labetalol. Pregnant women at high risk (history of hypertension in a previous pregnancy, chronic kidney disease, autoimmune disorders such as systemic lupus erythematosus and antiphospholipid syndrome, type 1 or 2 diabetes, and chronic hypertension), as well as those with more than one moderate risk factor (first pregnancy, age ≥40 years, interval ≥10 years since previous pregnancy, BMI ≥35 kg/m², positive family history, multiple pregnancy), are recommended to take 75–150 mg of acetylsalicylic acid daily from the 12th week of gestation until delivery. Regular monitoring of blood pressure and fetal condition is crucial for timely detection and prevention of complications. Postpartum blood pressure monitoring is particularly important due to the increased risk of developing persistent hypertension and other cardiovascular diseases. Blood pressure should be measured more frequently during the first two days after delivery, then once daily until the fifth day, with therapy adjusted as needed. Methyldopa, if used during pregnancy, should be replaced within two days postpartum, if blood pressure remains elevated, with the pre-pregnancy therapy. Furthermore, blood pressure evaluation is indicated 6–8 weeks after delivery along with therapy review. Management of hypertension during pregnancy is performed at the secondary healthcare level, under the supervision of a nephrologist.

Conclusion: Managing hypertension in pregnancy is essential for the health of both mother and fetus. The family physician is involved in the management of a pregnant woman presenting to the clinic with arterial hypertension, adjusting therapy at the beginning of pregnancy if she is taking medications such as ACE inhibitors or angiotensin receptor blockers, and referring her to secondary healthcare services. Postpartum monitoring is an integral part of care, as women with hypertension during pregnancy require long-term follow-up due to an increased risk of cardiovascular disease later in life.

REFERENCES:

1. Dika Ž, et al. Kliničke smjernice za dijagnostiku i liječenje kardiovaskularnih bolesti u postmenopauzi, tijekom trudnoće i drugim ginekološkim stanjima. Medix. 2021 Dec;27:150–151.
2. Bramham K, Parnell B, Nelson-Piercy C, Seed PT, Poston L, Chappell LC. Chronic hypertension and pregnancy outcomes: systematic review and meta-analysis. BMJ 2014;348:g2301.
3. Lowe SA, Bowyer L, Lust K, McMahon LP, Morton M, North RA, et al. SOMANZ guidelines for the management of hypertensive disorders of pregnancy 2014. Aust N Z J Obstet Gynaecol 2015;55:e1-2948–152.
4. National Institute for Health and Care Excellence (NICE). Hypertension in pregnancy: diagnosis and management. NICE guideline [NG133]. London: NICE; 2019 Jun 25.
5. Beech A., Mangos G. Management of hypertension in pregnancy, Aust Prescr. 2021,44:1

Hipertenzija u djece

Tamara Fable Karlić[1,2]

1. Istarski domovi zdravlja, Labin
2. Katedra za obiteljsku medicinu, Medicinski fakultet Sveučilišta u Rijeci

Ključne riječi: arterijska hipertenzija, arterijski tlak, djeca, liječnik obiteljske medicine
Adresa za dopisivanje: Tamara Fable Karlić, Istarska 2, 52333 Potpićan
E adresa: tamara.fable@gmail.com
ORCID: 0000-0002-9070-9800

Uvod s ciljem: Epidemiološke studije ukazuju na sve veći udio djece s povišenim arterijskim tlakom (AT), odnosno dijagnozom arterijske hipertenzije (AH). Prevalencija AH je heterogena i kreće se od 2,2% do 13% u Europi i SAD-u. Primarna hipertenzija u djece usko je povezana s epidemijom pretilosti i smanjenom tjelesnom aktivnosti čiji udio iznosi čak 15,3% među pretilom djecom, dok prevalencija sekundarne hipertenzije ovisi o dobi i veća je u mlađe djece. Povišene vrijednosti AT iz dječje dobi prenose se u odrasli dob i povezane su s povećanim kardiovaskularnim rizikom. Unatoč tome, AH kod djece često ostaje neprepoznata, a samim time neadekvatno obrađena i liječena.

Cilj ovog rada je osvijestiti liječnike obiteljske medicine o potrebi redovitog mjerenja AT kod djece i adolescenata, ranoj detekciji AH kod djece te pravovremenoj obradi i liječenju.

Rasprava: AT trebalo bi mjeriti kod sve zdrave djece od navršene treće godine života jednom godišnje. Mjerenja kod mlađe djece provode se ukoliko postoji povećan rizik za razvoj hipertenzije, dok se mjerenja pri svakom posjetu liječniku provode kod djece u rizičnoj skupini (pretilost, bolesti bubrega, šećerna bolest, srčane greške, antihipertenziv u terapiji). Kod mjerenja AT nužno je imati ispravan uređaj, odgovarajuću orukvicu i slijediti protokol. Dijagnoza AH kod djece mlađe od 16 godina definirana je vrijednostima sistoličkog i/ili dijastoličkog AT ≥ 95. centile za dob, spol i tjelesnu visinu izmjerenim u tri odvojena posjeta. Kod djece starije od 5 godina i tjelesne visine ≥ 120 cm za potvrdu dijagnoze, klasifikaciju i procjenu težine AH važno je učiniti kontinuirano mjerenje arterijskog tlaka (KMAT) kroz 24 sata. Daljnja dijagnostika uključuje laboratorijske nalaze, ehokardiografiju, ultrazvučni pregled bubrega te po potrebi opsežniju obradu u specijaliziranim ustanovama. Liječenje AH može biti nefarmakološko i farmakološko. Nefarmakološko liječenje koje se temelji na promjeni životnih navika (smanjenju tjelesne mase, povećanju tjelesne aktivnosti, pravilnoj prehrani, smanjenju unosa soli) osnova je liječenja sve djece s AH. To je ujedno i jedini način liječenja kod djece s visoko normalnim AT i AH prvog stupnja. Farmakološka terapija uvodi se ukoliko nefarmakološkim mjerama nije postignuta regulacija AT nakon 6 do 12 mjeseci. U slučajevima simptomatske AH, sekundarne AH, AH drugog stupnja, AH uz oštećenja ciljnih organa te AH kod djece sa šećernom bolešću farmakološka terapija uvodi se u prvoj liniji liječenja. Lijekovi koji su u Hrvatskoj odobreni za liječenje AH kod djece su enalapril, ramipril, lizinopril, valsartan, losartan, kandesartan, amlodipin, propranolol i metoprolol.

Zaključak: Rana detekcija AH kod djece i pravovremene intervencije ključne su u sprječavaju oštećenja ciljnih organa, a samim time kardiovaskularnih događaja u odrasloj dobi. Iako je prevalencija AH kod djece u značajnom porastu, u svakodnevnoj praksi još uvijek ostaje neprepoznata budući da je većinom asimptomatska. Liječnik obiteljske medicine je osoba prvog kontakta s djetetom te kao takav u procesu ranog postavljanje dijagnoze AH i daljnje intervencije zauzima vrlo važnu ulogu.

LITERATURA:

1. Herceg-Čavrak V, Šarić D, Kniewald H, Tokić-Pivac V, Ćuk M, Trutin I, i sur. Praktične smjernice za dijagnostiku i liječenje arterijske hipertenzije u djece i adolescenata. Medix. 2019;138(Suppl):1-50.
2. Lurbe E, Agabiti-Rosei E, Cruickshank JK, Dominiczak A, Erdine S, Hirth A, et al. 2016 European Society of Hypertension guidelines for the management of high blood pressure in children and adolescents. J Hypertens. 2016;34(10):1887-920. doi:10.1097/ HJH.0000000000001039.
3. Herceg Čavrak V. Dijagnostika hipertenzije u djece i adolescenata u ordinaciji liječnika primarne zdravstvene zaštite. Medicus. 2023;32(2. Transplantacija):285-292.
4. Valent Morić B. Arterijska hipertenzija u djece: novi hrvatski postupnik za dijagnostiku i liječenje. Liječnički Vjesnik. 2022;144(suplement 1):207-213.

Hypertension in children

Tamara Fable Karlić[1,2]

1. Medical health centers of Istria, Labin
2. Department of Family Medicine, Faculty of Medicine, University of Rijeka

Keywords: arterial hypertension, blood pressure, children, family medicine physician
Correspondence address: Tamara Fable Karlić, Istarska 2, 52333 Potpićan
E-mail: tamara.fable@gmail.com
ORCID: 0000-0002-9070-9800

Introduction with aim: Epidemiological studies indicate an increasing proportion of children with elevated blood pressure (BP), or a diagnosis of arterial hypertension (AH). The prevalence of AH is heterogeneous and ranges from 2.2% to 13% in Europe and the USA. Primary hypertension in children is closely related to the obesity epidemic and reduced physical activity, the proportion of which is as high as 15.3% among obese children, while the prevalence of secondary hypertension depends on age and is higher in younger children. Elevated BP values from childhood are transmitted to adulthood and are associated with increased cardiovascular risk. Despite this, AH in children often remains unrecognized, and therefore inadequately treated and treated. The aim of this paper is to raise awareness among family medicine physicians about the need for regular BP measurement in children and adolescents, early detection of AH in children, and timely treatment and management.

Discussion: BP should be measured in all healthy children from the age of three once a year. Measurements in younger children are performed if there is an increased risk of developing hypertension, while measurements are performed at every visit to the doctor in children in the risk group (obesity, kidney disease, diabetes, heart defects, antihypertensive therapy). When measuring BP, it is necessary to have the correct device, an appropriate cuff and follow the protocol. The diagnosis of AH in children under 16 years of age is defined by systolic and/or diastolic BP values ≥ 95th centile for age, sex and body height measured in three separate visits. In children older than 5 years and body height ≥ 120 cm, ambulatory blood pressure monitoring (ABPM) over 24 hours is important to confirm the diagnosis, classify and assess the severity of AH. Further diagnostics include laboratory findings, echocardiography, renal ultrasound examination and, if necessary, more extensive treatment in specialized institutions. Treatment of AH can be non-pharmacological and pharmacological. Non-pharmacological treatment based on lifestyle changes (weight loss, increased physical activity, proper diet, reduced salt intake) is the basis of treatment for all children with AH. It is also the only treatment for children with high normal BP and first-degree AH. Pharmacological therapy is introduced if non-pharmacological measures have not achieved BP regulation after 6 to 12 months. In cases of symptomatic AH, secondary AH, second-degree AH, AH with target organ damage and AH in children with diabetes, pharmacological therapy is introduced as the first line of treatment. The drugs approved in Croatia for the treatment of AH in children are enalapril, ramipril, lisinopril, valsartan, losartan, candesartan, amlodipine, propranolol and metoprolol.

Conclusion: Early detection of AH in children and timely interventions are crucial in preventing target organ damage and thus cardiovascular events in adulthood. Although the prevalence of AH in children is significantly increasing, it still remains unrecognized in everyday practice since it is mostly asymptomatic. The family doctor is the person of first contact with the child and as such plays a very important role in the process of early diagnosis of AH and further intervention.

REFERENCES:

1. Herceg-Čavrak V, Šarić D, Kniewald H, Tokić-Pivac V, Ćuk M, Trutin I, i sur. Praktične smjernice za dijagnostiku i liječenje arterijske hipertenzije u djece i adolescenata. Medix. 2019;138(Suppl):1-50.
2. Lurbe E, Agabiti-Rosei E, Cruickshank JK, Dominiczak A, Erdine S, Hirth A, et al. 2016 European Society of Hypertension guidelines for the management of high blood pressure in children and adolescents. J Hypertens. 2016;34(10):1887-920. doi:10.1097/ HJH.0000000000001039.
3. Herceg Čavrak V. Dijagnostika hipertenzije u djece i adolescenata u ordinaciji liječnika primarne zdravstvene zaštite. Medicus. 2023;32(2. Transplantacija):285-292.
4. Valent Morić B. Arterijska hipertenzija u djece: novi hrvatski postupnik za dijagnostiku i liječenje. Liječnički Vjesnik. 2022;144(suplement 1):207-213.

Hipertenzija u bolesnika s kardiorenometaboličkim poremećajem

Aleksander Stepanović[1]

1. Univerza v Ljubljani, Medicinska fakulteta, Katedra za družinsko medicino

Ključne riječi: Arterijska hipertenzija, Metabolički sindrom, Inzulinska rezistencija, Kardiovaskularne bolesti, Životni stil
Adresa za dopisivanje: Poljanski nasip 58, 1000 Ljubljana, Slovenija
E adresa: aleksander.stepanovic@mf.uni-lj.si
ORCID: 0000-0003-4155-0001

Uvod s ciljem. Arterijska hipertenzija definira se kao povišenje krvnog tlaka ≥140/90 mmHg prema važećim smjernicama. Kardiometabolički sindrom (MetS) predstavlja skup međusobno povezanih rizičnih čimbenika koji uključuju abdominalnu pretilost, povišene trigliceride, sniženi HDL kolesterol, povišeni krvni tlak i poremećenu glukozu natašte. Dijagnoza se postavlja kada su prisutna najmanje tri od navedenih kriterija. MetS pogađa do 30 % odrasle populacije u industrijaliziranim zemljama, a hipertenzija je njegova najčešća komponenta, što odražava njihovu blisku povezanost i zajedničke rizične čimbenike poput pretilosti, inzulinske rezistencije i dislipidemije.

Rasprava. Istodobna prisutnost hipertenzije i MetS-a značajno povećava rizik od aterosklerotske kardiovaskularne bolesti (ASCVD), šećerne bolesti tipa 2, kronične bubrežne bolesti i zatajenja srca. MetS približno udvostručuje rizik budućih kardiovaskularnih događaja te povećava rizik razvoja dijabetesa i do pet puta. Hipertenzija dodatno ubrzava oštećenje ciljnih organa, osobito srca, bubrega i krvnih žila, čime se povećavaju pobol i smrtnost. Patofiziološki, oba stanja proizlaze iz zajedničkih mehanizama, uključujući prekomjeran unos energije, centralnu pretilost, inzulinsku rezistenciju, kroničnu niskogradijentnu upalu, endotelnu disfunkciju i povećanu arterijsku krutost. Prekomjerni unos kalorija dovodi do nakupljanja lipida u jetri i skeletnim mišićima, potičući inzulinsku rezistenciju i hiperglikemiju. Disfunkcija masnog tkiva doprinosi proinflamatornom i protrombotskom stanju, što pogoršava vaskularnu disfunkciju i povisuje krvni tlak. Bolesnici s hipertenzijom i MetS-om često imaju izraženiju arterijsku krutost i poremećenu pulsnu hemodinamiku, što dodatno povećava kardiovaskularni rizik. Klinički se MetS smatra čimbenikom koji povećava rizik za ASCVD i kroničnu bubrežnu bolest. Stoga je potrebno provesti sveobuhvatnu procjenu rizika i primijeniti integrirani terapijski pristup usmjeren na sve komponente sindroma. Individualizacija terapije je ključna, osobito kod starijih i fragilnih bolesnika, kako bi se izbjeglo pretjerano liječenje i nuspojave. Promjene životnog stila temelj su liječenja. Preporučuju se prehrambeni pristup za snižavanje (kontrolu) krvnog tlaka ili mediteranska prehrana, redovita tjelesna aktivnost (najmanje 30 minuta umjerenog intenziteta većinu dana u tjednu), smanjenje tjelesne mase s ciljem gubitka 7–10 % tijekom 6–12 mjeseci te prestanak pušenja. Ove mjere mogu značajno sniziti krvni tlak, poboljšati metabolizam lipida i glukoze te znatno smanjiti incidenciju dijabetesa. Farmakološko liječenje indicirano je kada promjene životnog stila nisu dovoljne. Za većinu bolesnika ciljne vrijednosti krvnog tlaka su oko 130/80 mmHg, osobito kod onih sa šećernom bolešću, kroničnom bubrežnom bolešću ili visokim ASCVD rizikom. ACE inhibitori ili blokatori angiotenzinskih receptora (ARB) preferiraju se zbog svojih kardioprotektivnih i renoprotektivnih učinaka. Blokatori kalcijevih kanala i tiazidski diuretici često su potrebni u kombiniranoj terapiji. Kod bolesnika sa šećernom bolešću, pretilošću ili bubrežnom bolešću, lijekovi poput SGLT2 inhibitora, GLP-1 agonista receptora i antagonista mineralokortikoidnih receptora pružaju dodatne kardiometaboličke koristi.

Zaključak. Zaključno, arterijska hipertenzija i kardiometabolički sindrom usko su povezani zajedničkim patofiziološkim mehanizmima i grupiranjem rizičnih čimbenika. Učinkovito liječenje zahtijeva sveobuhvatan, individualiziran i višeciljani pristup koji kombinira promjene životnog stila s farmakološkom terapijom kako bi se smanjio dugoročni kardiovaskularni i bubrežni rizik.

LITERATURA:

1. John William McEvoy, et al. ESC Scientific Document Group , 2024 ESC Guidelines for the management of elevated blood pressure and hypertension: Developed by the task force on the management of elevated blood pressure and hypertension of the European Society of Cardiology (ESC) and endorsed by the European Society of Endocrinology (ESE) and the European Stroke Organisation (ESO), European Heart Journal, Volume 45, Issue 38, 7 October 2024, Pages 3912–4018, https://doi.org/10.1093/eurheartj/ehae178
2. Stone NJ, et al. Managing Atherosclerotic Cardiovascular Risk in Young Adults: JACC State-of-the-Art Review. J Am Coll Cardiol. 2022 Mar 1;79(8):819-836. doi: 10.1016/j.jacc.2021.12.016. PMID: 35210038.
3. Nilsson PM, Tuomilehto J, Rydén L. The metabolic syndrome - What is it and how should it be managed? Eur J Prev Cardiol. 2019 Dec;26(2_suppl):33-46. doi: 10.1177/2047487319886404. PMID: 31766917.
4. Sperling LS, et al. The CardioMetabolic Health Alliance: Working Toward a New Care Model for the Metabolic Syndrome. J Am Coll Cardiol. 2015 Sep 1;66(9):1050-67. doi: 10.1016/j.jacc.2015.06.1328. PMID: 26314534.
5. Ndumele CE, et al.; American Heart Association. A Synopsis of the Evidence for the Science and Clinical Management of Cardiovascular-Kidney-Metabolic (CKM) Syndrome: A Scientific Statement From the American Heart Association. Circulation. 2023 Nov 14;148(20):1636-1664. doi: 10.1161/CIR.0000000000001186. Epub 2023 Oct 9. PMID: 37807920.

Hypertension and Cardiometabolic Syndrome

Aleksander Stepanović[1]

1. University of Ljubljana, Faculty of medicine, Department of family medicine

Keywords: Hypertension, Metabolic Syndrome, Insulin Resistance, Cardiovascular Diseases, Life Style
Correspondence address: Poljanski nasip 58, 1000 Ljubljana, Slovenija
E-mail: aleksander.stepanovic@mf.uni-lj.si
ORCID: 0000-0003-4155-0001

Introduction. Arterial hypertension is defined as a persistent elevation of blood pressure ≥140/90 mmHg according to current guidelines. Cardiometabolic syndrome (MetS) is a cluster of interrelated risk factors that includes abdominal obesity, elevated triglycerides, low HDL cholesterol, elevated blood pressure, and impaired fasting glucose. The diagnosis is made when at least three of these criteria are present. MetS affects up to 30% of adults in industrialized countries, and hypertension is its most common component, reflecting their close relationship and shared risk factors such as obesity, insulin resistance, and dyslipidemia.

Discussion. The coexistence of hypertension and MetS substantially increases the risk of atherosclerotic cardiovascular disease (ASCVD), type 2 diabetes, chronic kidney disease, and heart failure. MetS approximately doubles the risk of future cardiovascular events and increases the risk of developing diabetes up to fivefold. Hypertension further accelerates target-organ damage, particularly to the heart, kidneys, and vasculature, amplifying overall morbidity and mortality. Pathophysiologically, both conditions arise from common mechanisms including overnutrition, central obesity, insulin resistance, chronic low-grade inflammation, endothelial dysfunction, and increased arterial stiffness. Excess caloric intake leads to lipid accumulation in the liver and skeletal muscle, promoting insulin resistance and hyperglycemia. Adipose tissue dysfunction contributes to a proinflammatory and prothrombotic state, which worsens vascular dysfunction and elevates blood pressure. Patients with both hypertension and MetS often demonstrate increased arterial stiffness and abnormal pulsatile hemodynamics, further elevating cardiovascular risk. Clinically, MetS is considered a risk-enhancing factor for ASCVD and chronic kidney disease. Therefore, management requires comprehensive risk assessment and an integrated treatment approach targeting all components of the syndrome. Individualization of therapy is essential, particularly in older or frail patients, to avoid overtreatment and adverse effects. Lifestyle modification is the cornerstone of therapy. Recommended interventions include adherence to the dietary approaches to stop hypertension or Mediterranean diet, regular physical activity (at least 30 minutes of moderate-intensity exercise most days), weight loss targeting a 7–10% reduction over 6–12 months, and smoking cessation. These measures can significantly lower blood pressure, improve lipid and glucose metabolism, and markedly reduce the incidence of diabetes. Pharmacologic treatment is indicated when lifestyle measures are insufficient. For most patients, blood pressure targets are around 130/80 mmHg, especially in those with diabetes, chronic kidney disease, or high ASCVD risk. ACE inhibitors or angiotensin receptor blockers are preferred due to their cardioprotective and renoprotective effects. Calcium channel blockers and thiazide diuretics are frequently required as part of combination therapy. In patients with diabetes, obesity, or kidney disease, agents such as SGLT2 inhibitors, GLP-1 receptor agonists, and mineralocorticoid receptor antagonists provide additional cardiometabolic benefits.

Conclusion. Arterial hypertension and cardiometabolic syndrome are tightly interconnected through shared mechanisms and risk factor clustering. Effective management requires a comprehensive, individualized, and multi-targeted strategy combining lifestyle interventions with pharmacologic therapy to reduce long-term cardiovascular and renal risk.

REFERENCES:

1. John William McEvoy, et al. ESC Scientific Document Group , 2024 ESC Guidelines for the management of elevated blood pressure and hypertension: Developed by the task force on the management of elevated blood pressure and hypertension of the European Society of Cardiology (ESC) and endorsed by the European Society of Endocrinology (ESE) and the European Stroke Organisation (ESO), European Heart Journal, Volume 45, Issue 38, 7 October 2024, Pages 3912–4018, https://doi.org/10.1093/eurheartj/ehae178
2. Stone NJ, et al. Managing Atherosclerotic Cardiovascular Risk in Young Adults: JACC State-of-the-Art Review. J Am Coll Cardiol. 2022 Mar 1;79(8):819-836. doi: 10.1016/j.jacc.2021.12.016. PMID: 35210038.
3. Nilsson PM, Tuomilehto J, Rydén L. The metabolic syndrome - What is it and how should it be managed? Eur J Prev Cardiol. 2019 Dec;26(2_suppl):33-46. doi: 10.1177/2047487319886404. PMID: 31766917.
4. Sperling LS, et al. The CardioMetabolic Health Alliance: Working Toward a New Care Model for the Metabolic Syndrome. J Am Coll Cardiol. 2015 Sep 1;66(9):1050-67. doi: 10.1016/j.jacc.2015.06.1328. PMID: 26314534.
5. Ndumele CE, et al.; American Heart Association. A Synopsis of the Evidence for the Science and Clinical Management of Cardiovascular-Kidney-Metabolic (CKM) Syndrome: A Scientific Statement From the American Heart Association. Circulation. 2023 Nov 14;148(20):1636-1664. doi: 10.1161/CIR.0000000000001186. Epub 2023 Oct 9. PMID: 37807920.

Zaštita mozga kroz kontrolu krvnog tlaka

Ksenija Kos[1,2]

1. Mercy Hospital, St. Louis (USA)
2. CROMed-USA, president, founder

Ključne riječi: hipertenzija, hipotenzija, mozak kao ciljni organ, cerebralna perfuzija, kognitivno propadanje
Adresa za dopisivanje: kkos@cromed-usa.org

Uvod s ciljem: Poremećaji regulacije krvnog tlaka, uključujući hipertenziju i hipotenziju, imaju značajan, ali često nedovoljno prepoznat utjecaj na zdravlje mozga. Hipertenzija je vodeći promjenjivi čimbenik rizika za moždani udar te važan uzrok cerebralne bolesti malih krvnih žila, kognitivnog propadanja i vaskularne demencije. Cilj je istaknuti mozak kao ciljni organ u situacijama povišenog, ali i sniženog arterijskog tlaka.

Rasprava: Dugotrajno povišeni krvni tlak dovodi do progresivnog oštećenja moždane cirkulacije, uključujući lezije bijele tvari, tihe (subkliničke) infarkte i smanjenje kognitivne rezerve, često prije pojave kliničkih simptoma. S druge strane, smanjena cerebralna perfuzija uzrokovana hipotenzijom također predstavlja važan mehanizam oštećenja mozga, osobito u starijih osoba i u bolesnika s neurološkim bolestima, poput Parkinsonove bolesti. Ortostatska hipotenzija, koja je posljedica autonomne disfunkcije i poremećaja barorefleksa, česta je u Parkinsonovoj bolesti te je povezana s ponavljanom cerebralnom hipoperfuzijom, što može dovesti do prolaznog gubitka svijesti, padova, kognitivnog usporenja i povećanog rizika od graničnih (watershed) infarkata.

Zaključak: Mozak je osjetljiv ciljni organ zahvaćen i povišenim i sniženim vrijednostima krvnog tlaka. Neophodan je individualizirani pristup, strategije liječenja temeljene na dokazima, rutinska procjena ortostatskih promjena te kontinuirana i dugotrajna skrb liječnika primarne zdravstvene zaštite usmjerena na očuvanje cerebralne perfuzije, smanjenje rizika od moždano udara i očuvanje kognitivnih funkcija tijekom životnog vijeka.

LITERATURA:

1. Shajahan S, Peters R, Carcel C, Woodward M, Harris K, Anderson CS. Hypertension and Mild Cognitive Impairment: State-of-the-Art Review. Am J Hypertens. 2024;37(6):385-393. doi: 10.1093/ajh/hpae007
2. Shinohara K. The brain and hypertension: how the brain regulates and suffers from blood pressure. Hypertens Res. 2025;48(2):862-866. doi: 10.1038/s41440-024-01990-3.
3. Canavan M, O'Donnell MJ. Hypertension and Cognitive Impairment: A Review of Mechanisms and Key Concepts. Front Neurol. 2022;13:821135. doi: 10.3389/fneur.2022.821135.
4. van Dalen JW, Brayne C, Crane PK, et al. Association of Systolic Blood Pressure With Dementia Risk and the Role of Age, U-Shaped Associations, and Mortality. JAMA Intern Med. 2022;182(2):142-152. doi: 10.1001/jamainternmed.2021.7009.
5. Silva RP, Rodrigues H. New Diagnostic Criteria for Overmedication in Systemic Arterial Hypertension. Tex Heart Inst J. 2022;49(5):e207350. doi: 10.14503/THIJ-20-7350.

Protecting the Brain Through Blood Pressure Control

Ksenija Kos[1,2]

1. Mercy Hospital, St. Louis (USA)
2. CROMed-USA, president, founder

Keywords: hypertension, hypotension, brain as a target organ, cerebral perfusion, cognitive decline
Correspondence address: kkos@cromed-usa.org

Introduction with aim: Blood pressure dysregulation, including hypertension and hypotension, has a substantial but often underrecognized impact on brain health. Hypertension remanis the leading modifiable risk factor for stroke and a major contributor to cerebral small vessel disease, cognitive decline, and vascular dementia. The aim is to underline the brain as a target organ in situations of both extremes hypertension and hypotension.

Discussion: Chronic elevated blood pressure causes progressive damage to the cerebral vasculature, resulting in white matter injury, silent infarctions, and reduced cognitive reserve, frequently long before clinical symptoms emerge. Conversely, inadequate cerebral perfusion due to hypotension represents an important cuse of brain injury, particularly in older adults and in patients with neurological conditions, such as Parkinson's disease. Orthostatic hypotension, driven by of autonomic dysfunction and impaired baroreflexes, is common in Parkinson's disease and is associated with recurrent cerebral hypoperfusion, which can lead to transient loss of consciousness, falls, cognitive slowing, and an increased risk of watershed infarcts.

Conclusion: The brain is a sensitive target organ affected by both elevated and low blood pressure. An individualized approach, evidence-based management strategies, routine assessment of orthostatic changes, and longitudinal primary care interventions aimed at optimizing cerebral perfusion, reducing stroke risk, and preserving cognitive function across the lifespan are necessary.

REFERENCES:

1. Shajahan S, Peters R, Carcel C, Woodward M, Harris K, Anderson CS. Hypertension and Mild Cognitive Impairment: State-of-the-Art Review. Am J Hypertens. 2024;37(6):385-393. doi: 10.1093/ajh/hpae007
2. Shinohara K. The brain and hypertension: how the brain regulates and suffers from blood pressure. Hypertens Res. 2025;48(2):862-866. doi: 10.1038/s41440-024-01990-3.
3. Canavan M, O'Donnell MJ. Hypertension and Cognitive Impairment: A Review of Mechanisms and Key Concepts. Front Neurol. 2022;13:821135. doi: 10.3389/fneur.2022.821135.
4. van Dalen JW, Brayne C, Crane PK, et al. Association of Systolic Blood Pressure With Dementia Risk and the Role of Age, U-Shaped Associations, and Mortality. JAMA Intern Med. 2022;182(2):142-152. doi: 10.1001/jamainternmed.2021.7009.
5. Silva RP, Rodrigues H. New Diagnostic Criteria for Overmedication in Systemic Arterial Hypertension. Tex Heart Inst J. 2022;49(5):e207350. doi: 10.14503/THIJ-20-7350.

Kronična venska bolest nogu- uloga liječnika obiteljske medicine u dijagnostici, liječenju i praćenju bolesnika

Iva Lisica Vučinić[1, 2]

1. Dom Zdravlja Primorsko Goranske županije, Rijeka
2. Katedra za obiteljsku medicinu Medicinskog Fakulteta Sveučilišta u Rijeci

Ključne riječi: Kronična venska bolest, varikozne vene, kompresivna terapija
Adresa za dopisivanje: Iva Lisica Vučinić, Šporova jama 1, 51215 Kastav
E adresa: iva.lisica.il@gmail.com
ORCID: 0000-0002-7341-9414

Uvod s ciljem: Kronična venska bolest najčešća je vaskularna bolest koja nastaje zbog poremećaja venskog protoka, najčešće uslijed insuficijencije venskih zalistaka, venske opstrukcije ili smanjene funkcije mišićne pumpe. Posljedično dolazi do venske staze i razvoja brojnih simptoma te, u uznapredovalim stadijima, do kronične venske insuficijencije s pojavom edema, kožnih promjena i venskih ulkusa. Cilj ovog rada je prikazati ulogu obiteljskog liječnika u ranom prepoznavanju, dijagnostici, liječenju i praćenju bolesnika s kroničnom venskom bolesti.

Prikaz slučaja: Pacijentica u dobi od 36 godina javlja se u ambulantu obiteljskog liječnika zbog višegodišnjih bolova, grčeva i osjećaja težine u nogama, izraženijih tijekom ljetnih mjeseci. U anamnezi se ističu četiri trudnoće, stojeći posao u kuhinji te pozitivna obiteljska anamneza kronične venske bolesti. Fizikalnim pregledom uočene su varikozne vene desne noge u području natkoljenice i potkoljenice te dorzuma stopala gdje je prisutna hemosideroza kože. Arterijske pulzacije su uredne kao i osjet i motorika nogu. Na temelju anamneze i fizikalnog pregleda postavlja se dijagnoza kronične venske bolesti. U terapiju je uvedena mikronizirana pročišćena smjesa flavonoida uz lokalnu primjenu heparinskog pripravka. Preporučene su nefarmakološke mjere s naglaskom na redovitost nošenja adekvatne kompresivne čarape. Pacijentica je upućena na daljnju dijagnostičku obradu color doppler vena nogu i pregled flebologa nakon čega joj je preporučena endovaskularna laserska ablacija vene safene magne i skleroterapija varikoziteta.

Rasprava: Dijagnostika kronične venske bolesti temelji se na anamnezi, kliničkom pregledu i ultrazvučnoj procjeni venskog sustava donjih ekstremiteta. CEAP klasifikacija omogućuje standardiziranu procjenu težine bolesti i praćenje njezina napredovanja. Liječenje je usmjereno na ublažavanje simptoma i sprječavanje progresije bolesti, pri čemu kompresivna terapija predstavlja temeljni oblik liječenja u svim stadijima. Pri fizikalnom pregledu neophodno je procijeniti i arterijsku cirkulaciju i komorbiditete radi odluke o primjeni kompresivne terapije. Dodatno se primjenjuju i ostale nefarmakološke mjere i farmakološka terapija, dok se invazivni postupci razmatraju kod bolesnika s perzistentnim simptomima unatoč konzervativnom liječenju. Pravodobna dijagnoza i pravilno odabrana terapija imaju ključnu ulogu u sprječavanju komplikacija, osobito nastanka venskih ulkusa.

Zaključak: Kronična venska bolest je česta i progresivna bolest koja značajno utječe na kvalitetu života bolesnika. Sustavan dijagnostički pristup, te pravodobno i adekvatno liječenje, s naglaskom na kompresivnu terapiju i edukaciju bolesnika, ključni su za uspješno upravljanje bolešću i prevenciju komplikacija.

LITERATURA:

1. Kabnick L S, Scovell S. Overview of lower extremity chronic venous disease (Internet). UpToDate; 2025. [pristupljeno 19.01.2026.]. Dostupno na: https://www.uptodate.com/contents/overview-of-lower-extremity-chronic-venous-disease
2. Mathes B M, Kabnick L S. Clinical manifestations of lower extremity chronic venous disease (Internet). UpToDate; 2025. [pristupljeno 19.01.2026.]. Dostupno na: https://www.uptodate.com/contents/clinical-manifestations-of-lower-extremity-chronic-venous-disorders
3. Armstrong D G, Meyr A J. Compression therapy for the treatment of chronic venous insufficiency (Internet). UpToDate; 2025. [pristupljeno 19.01.2026.]. Dostupno na: https://www.uptodate.com/contents/compression-therapy-for-the-treatment-of-chronic-venous-insufficiency

Chronic Venous Disease of the Lower Extremities – The Role of the Family Physician in the Diagnosis, Treatment, and Follow-up of Patients

Iva Lisica Vučinić[1, 2]

1. Health center of Primorsko goranska county, Rijeka
2. University of Rijeka, Faculty of Medicine, Department of family medicine

Keywords: Chronic venous disease, varicose veins, compression therapy
Correspondence address: Iva Lisica Vučinić, Šporova jama 1, 51215 Kastav
E-mail: iva.lisica.il@gmail.com
ORCID: 0000-0002-7341-9414

Introduction with aim: Chronic venous disease is the most common vascular disease, arising from disorders of venous blood flow, most often due to venous valve insufficiency, venous obstruction, or reduced function of the muscle pump. As a consequence, venous stasis develops, leading to numerous symptoms and, in advanced stages, to chronic venous insufficiency with the occurrence of edema, skin changes, and venous ulcers. The aim of this paper is to present the role of the family physician in the early recognition, diagnosis, treatment, and follow-up of patients with chronic venous disease.

Case report: A 36-year-old female patient presented to the family medicine clinic with a history of several years of pain, cramps, and a feeling of heaviness in the legs, more pronounced during the summer months. Her medical history revealed four pregnancies, a standing job in a kitchen, and a positive family history of chronic venous disease. Physical examination showed varicose veins of the right leg in the thigh and lower leg region, as well as on the dorsum of the foot, where skin hemosiderosis was present. Arterial pulses were normal, as were sensation and motor function of the legs. Based on the medical history and physical examination, a diagnosis of chronic venous disease was established. Treatment with micronized purified flavonoid fraction was initiated, along with topical application of a heparin preparation. Non-pharmacological measures were recommended, with an emphasis on regular use of appropriately fitted compression stockings. The patient was referred for further diagnostic evaluation - color doppler ultrasound of the leg veins and a consultation with a phlebologist, after which endovascular laser ablation of the great saphenous vein and sclerotherapy of the varicosities were recommended.

Discussion: The diagnosis of chronic venous disease is based on medical history, clinical examination, and ultrasound assessment of the venous system of the lower extremities. The CEAP classification enables standardized assessment of disease severity and monitoring of its progression. Treatment is aimed at alleviating symptoms and preventing disease progression, with compression therapy representing the cornerstone of treatment at all stages. During physical examination, assessment of arterial circulation and comorbidities is essential in order to determine the suitability of compression therapy. Additional non-pharmacological measures and pharmacological therapy are also applied, while invasive procedures are considered in patients with persistent symptoms despite conservative treatment. Timely diagnosis and appropriately selected therapy play a key role in preventing complications, particularly the development of venous ulcers.

Conclusion: Chronic venous disease is a common and progressive condition that significantly affects patients' quality of life. A systematic diagnostic approach, along with timely and adequate treatment, emphasizing compression therapy and patient education, is essential for successful disease management and prevention of complications.

REFERENCES:

1. Kabnick L S, Scovell S. Overview of lower extremity chronic venous disease (Internet). UpToDate; 2025. [pristupljeno 19.01.2026.]. Dostupno na: https://www.uptodate.com/contents/overview-of-lower-extremity-chronic-venous-disease
2. Mathes B M, Kabnick L S. Clinical manifestations of lower extremity chronic venous disease (Internet). UpToDate; 2025. [pristupljeno 19.01.2026.]. Dostupno na: https://www.uptodate.com/contents/clinical-manifestations-of-lower-extremity-chronic-venous-disorders
3. Armstrong D G, Meyr A J. Compression therapy for the treatment of chronic venous insufficiency (Internet). UpToDate; 2025. [pristupljeno 19.01.2026.]. Dostupno na: https://www.uptodate.com/contents/compression-therapy-for-the-treatment-of-chronic-venous-insufficiency

Farmakoterapija kronične venske bolesti

Nives Radošević Quadranti[1,2]

1. Katedra za obiteljsku medicinu, Medicinski fakultet Sveučilišta u Rijeci
2. Dom zdravlja Primorsko-goranske županije

Ključne riječi: kronična venska bolest, liječenje lijekovima, venoaktivni lijekovi, nesteroidni protuupalni lijekovi, obiteljska medicina
Adresa za dopisivanje: Martina Kontuša 18, 51000 Rijeka
E adresa: nives051@gmail.com
ORCID: 0000-0003-4192-4077

Uvod s ciljem: Kronična venska bolest (KVB) obuhvaća širok raspon kliničkih manifestacija, od subjektivnih tegoba poput osjećaja težine, boli i umora u nogama do edema, kožnih promjena i venskih ulkusa. Zbog svoje učestalosti i kroničnog tijeka, KVB se najčešće dijagnosticira i liječi u primarnoj zdravstvenoj zaštiti. Cilj je rada prikazati suvremeni, racionalni i na smjernicama utemeljen pristup farmakoterapiji KVB, s naglaskom na mehanizme djelovanja, kliničke indikacije i mjesto pojedinih skupina lijekova u svakodnevnoj praksi liječnika obiteljske medicine.

Rasprava: Farmakoterapija KVB-a usmjerena je prvenstveno na ublažavanje simptoma, smanjenje edema i upalne komponente bolesti te prevenciju komplikacija. Temelj farmakološkog liječenja čine venoaktivni lijekovi, koji djeluju na venski tonus, kapilarnu propusnost i mikrocirkulaciju. Najviše dokaza o učinkovitosti ima mikronizirana pročišćena flavonoidna frakcija (MPFF), koja dokazano smanjuje bol, osjećaj težine i oticanje nogu te pokazuje povoljan učinak na cijeljenje venskih ulkusa. Nesteroidni protuupalni lijekovi (NSAIL) imaju važnu ulogu u kratkotrajnom liječenju boli i upale, osobito kod bolnih varikoziteta, površinske venske tromboze i venskih ulkusa. Njihova primjena treba biti vremenski ograničena zbog mogućih nuspojava. U bolesnika s izraženom boli, kada NSAIL nisu dovoljni ili su kontraindicirani, može se razmotriti kratkotrajna primjena analgetika s centralnim djelovanjem poput tramadola. Antikoagulantna terapija nema rutinsku indikaciju u kroničnoj venskoj bolesti, ali ima jasno mjesto u liječenju i prevenciji duboke venske tromboze bez ili s plućnom embolijom te u odabranim slučajevima površinske venske tromboze. Odluku o primjeni i trajanju terapije potrebno je temeljiti na individualnoj procjeni rizika kao i smjernicama, kako bi se izbjegla nepotrebna dugotrajna primjena. Antiagregacijska terapija nema rutinsku indikaciju u KVB-u te se koristi selektivno, prvenstveno u bolesnika s istodobnom arterijskom bolešću. Primjena antimikrobnih lijekova u površinskoj trombozi najčešće je nepotrebna, neracionalna i potencijalno štetna, jer se radi o sterilnom upalnom procesu, a antibiotici su indicirani isključivo kod jasnih znakova bakterijske infekcije. Lokalna farmakoterapija važan je dio liječenja kožnih manifestacija KVB-a. Topikalni kortikosteroidi, emolijensi i antiseptici koriste se u liječenju hipostatskog dermatitisa, dok je kod venskih ulkusa naglasak na pravilnoj lokalnoj terapiji rane kao dijelu multidisciplinarnog pristupa. Lokalna primjena antibiotika je kontraindicirana. Antihistaminici, uz lokalnu terapiju, korisni su u kontroli svrbeža koji često prati KVB.

Zaključak: Farmakoterapija KVB ima primarno simptomatsku i potpornu ulogu, ali je ključna za poboljšanje kvalitete života bolesnika i smanjenje progresije bolesti. Venoaktivni lijekovi predstavljaju temelj liječenja, dok se ostale skupine lijekova primjenjuju selektivno, ovisno o kliničkoj slici i fazi bolesti. Racionalan i individualiziran terapijski pristup, u kombinaciji s kompresivnom terapijom i promjenama životnih navika, predstavlja osnovu uspješnog dugoročnog liječenja kronične venske bolesti u obiteljskoj medicini.

LITERATURA:

1. Gloviczki ML, Kakkos SK, Urbanek T, Chuback J, Nicolaides A. The role of venoactive compounds in the treatment of chronic venous disease. J Vasc Surg Venous Lymphat Disord. 2025 Sep;13(5):102258. doi: 10.1016/j.jvsv.2025.102258.
2. Stevens SM, Woller SC, Baumann Kreuziger L, Doerschug K, Geersing GJ, Klok FA, King CS, Murin S, Vintch JRE, Wells PS, Wasan S, Moores LK. Antithrombotic Therapy for VTE Disease: Compendium and Review of CHEST Guidelines 2012-2021. Chest. 2024 Aug;166(2):388-404. doi: 10.1016/j.chest.2024.03.003.
3. Banfić Lj. Smjernice za dijagnozu, liječenje i sprječavanje venske tromboze. Cardiol Croat. 2016;11(9):351–374. | DOI: http://dx.doi.org/10.15836/ccar2016.351.
4. Di Nisio M, Wichers IM, Middeldorp S. Treatment for superficial thrombophlebitis of the leg. Cochrane Database Syst Rev. 2018 Feb 25;2(2):CD004982. doi: 10.1002/14651858.CD004982.pub6.
5. Yosipovitch, G., Nedorost, S.T., Silverberg, J.I. et al. Stasis Dermatitis: An Overview of Its Clinical Presentation, Pathogenesis, and Management. Am J Clin Dermatol 24, 275–286 (2023). https://doi.org/10.1007/s40257-022-00753-5.

Pharmacotherapy of chronic venous disease

Nives Radošević Quadranti[1,2]

1. Department of Family Medicine, Faculty of Medicine, University of Rijeka
2. Community Health Centre of Primorje-Gorski Kotar County

Keywords: chronic venous disease, drug treatment, venoactive drugs, nonsteroidal anti-inflammatory drugs, family medicine
Correspondence address: Martina Kontuša 18, 51000 Rijeka
E-mail: nives051@gmail.com
ORCID: 0000-0003-4192-4077

Introduction and aim: Chronic venous disease (CVD) encompasses a wide range of clinical manifestations, from symptoms such as a feeling of heaviness, pain and fatigue in the legs to edema, skin changes and venous ulcers. Due to its frequency and chronic course, CVD is most often diagnosed and treated in primary health care. The aim of the paper is to present a modern, rational and guideline-based approach to CVD pharmacotherapy, with an emphasis on mechanisms of action, clinical indications and the use of individual drug groups in the everyday practice of family medicine physicians.

Discussion: CVD pharmacotherapy is aimed primarily at alleviating symptoms, reducing edema and the inflammatory component of the disease, and preventing complications. The basis of pharmacological treatment are venoactive drugs, which affect venous tone, capillary permeability and microcirculation. The most evidence of effectiveness is provided by micronized purified flavonoid fraction (MPFF), which has been shown to reduce pain, heaviness, and swelling of the legs, and has shown a beneficial effect on the healing of venous ulcers. Nonsteroidal anti-inflammatory drugs (NSAIDs) play an important role in the short-term treatment of pain and inflammation, especially in painful varicose veins, superficial vein thrombosis, and venous ulcers. Their use should be time-limited due to possible side effects. In patients with severe pain, if NSAIDs are insufficient or contraindicated, short-term use of centrally acting analgesics such as tramadol may be considered. Anticoagulant therapy is not routinely indicated in chronic venous disease, but has a key place in the treatment and prevention of deep venous thrombosis with or without pulmonary embolism and in selected cases of superficial venous thrombosis. The decision on the introduction and duration of therapy should be based on an individual risk assessment as well as guidelines, in order to avoid unnecessary long-term use. Antiplatelet therapy is not routinely indicated in CVD and is used selectively, primarily in patients with concurrent arterial disease. The use of antimicrobial drugs in superficial thrombosis is most often unnecessary, irrational and potentially harmful, because it is a sterile inflammatory process, and antibiotics are indicated only for clear signs of bacterial infection. Topical pharmacotherapy is an important part of the treatment of cutaneous manifestations of CVD. Topical corticosteroids, emollients, and antiseptics are used in the treatment of hypostatic dermatitis, while in venous ulcers the emphasis is on proper local wound therapy as part of a multidisciplinary approach. Topical application of antibiotics is contraindicated. Antihistamines, in addition to topical therapy, are useful in controlling the itching that often accompanies CVD.

Conclusion: Pharmacotherapy of CVD has a primarily symptomatic and supportive role, but is crucial for improving the patient's quality of life and reducing disease progression. Venoactive drugs represent the basis of treatment, while other groups of drugs are used selectively, depending on the clinical picture and stage of the disease. Rational and individualized therapeutic approach, combined with compression therapy and lifestyle changes, is the basis for successful long-term treatment of chronic venous disease in family medicine.

REFERENCES:

1. Gloviczki ML, Kakkos SK, Urbanek T, Chuback J, Nicolaides A. The role of venoactive compounds in the treatment of chronic venous disease. J Vasc Surg Venous Lymphat Disord. 2025 Sep;13(5):102258. doi: 10.1016/j.jvsv.2025.102258.
2. Stevens SM, Woller SC, Baumann Kreuziger L, Doerschug K, Geersing GJ, Klok FA, King CS, Murin S, Vintch JRE, Wells PS, Wasan S, Moores LK. Antithrombotic Therapy for VTE Disease: Compendium and Review of CHEST Guidelines 2012-2021. Chest. 2024 Aug;166(2):388-404. doi: 10.1016/j.chest.2024.03.003.
3. Banfić Lj. Smjernice za dijagnozu, liječenje i sprječavanje venske tromboze. Cardiol Croat. 2016;11(9):351–374. | DOI: http://dx.doi.org/10.15836/ccar2016.351.
4. Di Nisio M, Wichers IM, Middeldorp S. Treatment for superficial thrombophlebitis of the leg. Cochrane Database Syst Rev. 2018 Feb 25;2(2):CD004982. doi: 10.1002/14651858.CD004982.pub6.
5. Yosipovitch, G., Nedorost, S.T., Silverberg, J.I. et al. Stasis Dermatitis: An Overview of Its Clinical Presentation, Pathogenesis, and Management. Am J Clin Dermatol 24, 275–286 (2023). https://doi.org/10.1007/s40257-022-00753-5.

Značaj interdisciplinarne suradnje vaskularnog kirurga i obiteljskog liječnika u liječenju kronične venske bolesti nogu

Slaven Suknaić[1,2]

1. Poliklinika VeNeS, d.o.o.
2. Katedra za kirurgiju Medicinskog fakuteta Sveučilišta u Rijeci

Ključne riječi: interdisciplinarna suradnja, kronična venska bolest, liječnik obiteljske medicine, vaskularni kirurg
Adresa za dopisivanje: Poliklinika VeNeS, Petračićeva 1, 10 000 Zagreb
E adresa: info.poliklinikavenes@gmail.com
ORCID: 0000-0002-7610-5437

Uvod s ciljem: Kronična venska bolest (KVB) uzrokovana je smetnjama povratka venske krvi prema srcu i povišenim tlakom u venama nogu. Učestalo je stanje u općoj populaciji. Nastaje zbog oštećenja venskih zalistaka, a od rizika za nastanak bolesti navodi se genetska predispozicija, starija dob, dugotrajno stajanje/sjedenje, pretilost, povijest tromboza dugokih vena. Najčešći simptomi na koje se pacijenti žale su: težina u nogama, tupi bolovi, grčevi (češće se javljaju noću), svrbež kože, oticanje potkoljenica. KVB se klasificira prema CEAP klasifikaciji od kliničkog stadija 0 (nema klinički vidljivih vena) do stadija 6 (aktivni venski ulkus). Osnovu dijagnostike čini ultrazvučni pregled obojenim dopplerom vena kojim procjenjujemo protok krvi i funkciju zalistaka. Liječenje pacijenata s KVB može biti konzervativno i operativno, ovisno o stadiju bolesti i mogućnostima liječenja. Cilj je prikazati interdisciplinarnu suradnju liječnika obiteljske medicine i vaskularnog kirurga.

Rasprava: Konzervativni pristup liječenja i praćenje bolesnika s KVB uglavnom je u ingerenciji liječnika obiteljske medicine, dok je za aktivan, operativni pristup odgovoran vaskularni kirurg. Danas u liječenju sudjeluju i intervencijski radiolog, dermatolog, kardiolog i flebolog. Minimalno-invazivne metode liječenja proširenih površinskih vena, kao najučestalijeg uzroka KVB, predstavljaju "zlatni standard" u liječenju pacijenata. Metode su termalne i netermalne, provode se ambulantno uz lokalnu i tumescentnu anesteziju odnosno bez potrebe za anestezijom.

Poznavanje individualnih karakteristika pacijenta koje će obiteljski liječnik napisati u obliku uputnog pisma, a vaskularni kirurg na nalaz opisati metodu operativnog zahvata uz moguće nuspojave i komplikacije te mjere koje se poduzimaju kod tih događaja, osnova su dobre dvosmjerne interdisciplinarne profesionalne suradnje.

Zaključak: Kako bi se postigao kvalitetan rezultat u liječenju pacijenata s KVB kao kronične progresivne bolesti, neophodna je dobra interakcija između liječnika obiteljske medicine i vaskularnog kirurga u vidu pravovremene dijagnostike i terapijskih modaliteta.

LITERATURA:

1. Safa Salim , Matthew Machin , Benjamin O Patterson , Sarah Onida , Alun H Davies Global Epidemiology of Chronic Venous Disease: A Systematic Review With Pooled Prevalence Analysis. Ann Surg. 2021 Dec 1;274(6):971-976
2. Gloviczki ML, Kakkos SK, Urbanek T, Chuback J, Nicolaides A. The role of venoactive compounds in the treatment of chronic venous disease. J Vasc Surg Venous Lymphat Disord. 2025 Sep;13(5):102258. doi: 10.1016/j.jvsv.2025.102258.
3. Varicose veins: diagnosis and management. Clinical guideline. Reference number: CG168Published: 24 July 2013

The importance of interdisciplinary cooperation between vascular surgeons and family physicians in the treatment of chronic venous disease

Slaven Suknaić[1,2]

1. Poliklinika VeNeS, d.o.o.
2. Department of Surgery, Faculty of Medicine, University of Rijeka

Keywords: chronic venous disease, family physician, interdisciplinary collaboration, vascular surgeon
Correspondence address: Polyclinic VeNeS , Petračićeva 1, 10 000 Zagreb
E-mail: info.poliklinikavenes@gmail.com
ORCID: 0000-0002-7610-5437

Introduction with aim: Chronic venous disease (CVD) is caused by impaired venous blood return to the heart and increased pressure in the veins of the legs. It is a common condition in the general population. It occurs due to damage to the venous valves, and the risk factors for the disease include genetic predisposition, older age, prolonged standing/sitting, obesity, and a history of long-vein thrombosis. The most common symptoms that patients complain of are heaviness in the legs, dull aches, cramps (more often occurring at night), itching of the skin, and swelling of the lower legs. CVD is classified according to the CEAP classification from clinical stage 0 (no clinically visible veins) to stage 6 (active venous ulcer). The basis of diagnosis is an ultrasound color Doppler imaging of the veins, which assesses blood flow and valve function. The treatment of patients with CVD can be conservative and surgical, depending on the stage of the disease and treatment options. The aim is to present the interdisciplinary cooperation between a family doctor and a vascular surgeon.

Discussion: The conservative approach to treatment and monitoring of patients with CVD is mainly the responsibility of family physicians, while the vascular surgeon is responsible for the active, surgical approach. Today, interventional radiologists, dermatologists, cardiologists and phlebologists also participate in treatment. Minimally invasive methods of treating varicose superficial veins, as the most common cause of CVD, represent the “gold standard” in treating patients. The methods are thermal and non-thermal, and are performed on an outpatient basis with local and tumescent anesthesia, or without the need for anesthesia. Knowledge of the individual characteristics of the patient, which the family physician will write in the form of a referral letter, and the vascular surgeon, upon examination, will describe the method of the surgical procedure, along with possible side effects and complications, and the measures taken in the event of these events, are the basis for good two-way interdisciplinary professional cooperation.

Conclusion: In order to achieve a quality result in the treatment of patients with CVD as a chronic progressive disease, a good interaction between family physician and vascular surgeons in the form of timely diagnostics and therapeutic modalities is necessary.

REFERENCES:

1. Safa Salim , Matthew Machin , Benjamin O Patterson , Sarah Onida , Alun H Davies Global Epidemiology of Chronic Venous Disease: A Systematic Review With Pooled Prevalence Analysis. Ann Surg. 2021 Dec 1;274(6):971-976
2. Gloviczki ML, Kakkos SK, Urbanek T, Chuback J, Nicolaides A. The role of venoactive compounds in the treatment of chronic venous disease. J Vasc Surg Venous Lymphat Disord. 2025 Sep;13(5):102258. doi: 10.1016/j.jvsv.2025.102258.
3. Varicose veins: diagnosis and management. Clinical guideline. Reference number: CG168Published: 24 July 2013

Od smjernica do kliničke izvrsnosti: priručnik i uspostava specijalizirane ambulante kao temelj zbrinjavanja kroničnih rana u primarnoj zdravstvenoj zaštiti

Andrea Bilić[1]

1. Dom zdravlja Mostar, specijalizirana Ambulanta za kronične rane

Ključne riječi: kronične rane; primarna zdravstvena zaštita; klinička izvrsnost; smjernice; specijalizirana ambulanta
E adresa: andrea_bilic@hotmail.com
ORCID: 0009-0001-3365-4276

Uvod s ciljem: Kronične rane predstavljaju su značajan klinički, organizacijski i ekonomski izazov u primarnoj zdravstvenoj zaštiti (PZZ), osobito kod bolesnika s perifernom arterijskom bolešću i kroničnom venskom bolešću. Unatoč dostupnosti nacionalnih i međunarodnih smjernica, njihova provedba u svakodnevnoj praksi PZZ-a često je bila ograničena nedostatkom standardiziranih, praktičnih i lako primjenjivih alata. S ciljem unapređenja skrbi i postizanja kliničke izvrsnosti, razvijen je praktični priručnik za zbrinjavanje kroničnih rana te je utemeljena specijalizirana Ambulanta za kronične rane pri Domu zdravlja Mostar. Cilj ovog rada bio je prikazati ulogu priručnika i specijalizirane ambulante u operacionalizaciji smjernica kroz prikaz slučaja.

Prikaz slučaja: Prikazan je bolesnik s kroničnim ulkusom potkoljenice cirkulatorne etiologije, dugotrajnog tijeka i nezadovoljavajućeg odgovora na prethodno provođene terapijske postupke. Klinička obrada provedena je u okviru Ambulante za kronične rane pri Domu zdravlja Mostar te je uključivala detaljnu anamnezu, procjenu vaskularnog statusa, lokalni pregled rane i identifikaciju čimbenika koji su usporavali cijeljenje. Terapijski pristup bio je strukturiran prema protokolima opisanim u praktičnom priručniku za kronične rane u PZZ-u te je obuhvaćao lokalnu obradu rane, odgovarajući debridman, primjenu suvremenih obloga, kompresivnu terapiju i kontinuirano praćenje ishoda. Tijekom praćenja zabilježeno je postupno smanjenje površine rane, poboljšanje lokalnog statusa te konačno zatvaranje ulkusa.

Rasprava: Prikazani slučaj potvrdio je da kombinacija strukturirane literature i organizacijskog modela skrbi omogućuje dosljednu primjenu smjernica u PZZ-u. Priručnik je služio kao temeljni klinički alat, dok je specijalizirana ambulanta omogućila standardizirani i kontinuirani pristup bolesnicima s kroničnim ranama. Usporedba s dostupnom literaturom pokazala je da ovakav model skrbi doprinosi boljim kliničkim ishodima, smanjenju varijabilnosti u liječenju i jačanju uloge obiteljskog liječnika u sustavu zdravstvene zaštite.

Zaključak: Klinička izvrsnost u zbrinjavanju kroničnih rana započinjala je izradom praktičnog priručnika i njegovom implementacijom kroz rad specijalizirane ambulante u PZZ-u. Ovaj integrirani pristup omogućio je učinkovitu provedbu smjernica u svakodnevnoj praksi te potvrdio primarnu zdravstvenu zaštitu kao ključnu razinu skrbi za bolesnike s kroničnim ranama.

From guidelines to clinical cxcellence: A practical manual and the establishment of a specialized clinic as the foundation for chronic wound management in primary health care

Andrea Bilić[1]

1. Primary health care center, Specialized Chronic wound clinic

Keywords: chronic wounds; primary health care; clinical excellence; guidelines; specialized clinic
E-mail: andrea_bilic@hotmail.com
ORCID: 0009-0001-3365-4276

Introduction with aim: Chronic wounds represent a major clinical, organizational and economic challenge in primary health care (PHC), particularly in patients with peripheral arterial disease and chronic venous disease. Despite the availability of national and international guidelines, their implementation in everyday PHC practice has often been limited by the lack of standardized and practical tools. To improve quality of care and achieve clinical excellence, a practical manual for chronic wound management was developed and a specialized Chronic Wound Clinic was established within the Mostar Health Center. The aim of this paper was to present the role of the practical manual and the specialized clinic in translating guidelines into clinical practice through a case presentation.

Case presentation: A patient with a long-standing chronic lower leg ulcer of circulatory etiology and an unsatisfactory response to previous treatment was presented. Clinical assessment was performed at the Chronic Wound Clinic of the Mostar Health Center and included a detailed medical history, vascular assessment, local wound examination and identification of factors delaying wound healing. The therapeutic approach followed structured protocols described in the practical manual for chronic wound management in PHC and included local wound care, appropriate debridement, advanced dressings, compression therapy and continuous outcome monitoring. During follow-up, gradual wound size reduction, improvement of local wound status and complete wound closure were observed.

Discussion: This case demonstrated that the integration of structured literature and an organizational model of care enabled consistent guideline implementation in PHC. The practical manual served as a core clinical tool, while the specialized clinic provided a standardized and continuous approach to patients with chronic wounds. Comparison with existing literature confirmed that such models improved clinical outcomes, reduced variability in care and strengthened the role of family physicians.

Conclusion: Clinical excellence in chronic wound management began with the development of a practical manual and its implementation through a specialized clinic in PHC. This integrated approach facilitated effective guideline translation into daily practice and confirmed primary health care as a key level of care for patients with chronic wounds.

Specifična dodatna edukacija specijalizanata obiteljske medicine prema Kvarnerskom modelu, rezultati istraživanja

Tamara Sinožić[1,2]

1. Specijalistička ordinacija obiteljske medicine, Mošćenička Draga
2. Katedra za obiteljsku medicinu, Medicinski fakultet, Sveučilište u Rijeci

Ključne riječi: edukacija, liječenje rana, specijalizacija obiteljske medicine
Adresa za dopisivanje: Barba Rike 5a, 51417 Mošćenička Draga
E adresa: sinozictamara@gmail.com
ORCID: 0000-0003-3174-7441

Uvod s ciljem: Skrb za bolesnika s kroničnom ranom je kompleksna, od liječnika obiteljske medicine zahtijeva specifičnu, dodatnu teoretsko-praktičnu edukaciju kako bi se zadovoljile brojne potrebe u skrbi. Stoga je od 2019 g. u sklopu specijalizacije obiteljske medicine, osim teoretske nastave tijekom poslijediplomskog studija, ponuđena mogućnost neobaveznog stažiranja u trajanju od mjesec dana u ordinaciji obiteljske medicine sa specijalizacijom za liječenje rana. Cilj rada je ispitati mišljenje specijalizanata obiteljske medicine o tako organiziranoj edukaciji tijekom specijalističkog staža nazvanoj Kvarnerskim modelom edukacije.

Metode: U istraživanje je bilo uključeno 24 specijalizanata iz programa specijalizacije obiteljske medicine na Medicinskom fakultetu Sveučilišta u Rijeci od 2019. do 2024. godine. Provedena je anonimna anketa sa 17 pitanja, 3 sociodemografska, 12 o edukaciji i 2 otvorena o programu i organizaciji staža.

Rezultati: Odgovorio je 21 specijalizant (19 žena). Većina specijalizanata bila je u dobi od 25 do 45 godina (17), s prethodnim iskustvom rada u obiteljskoj medicini duljim od 5 godina (16). Sudionici smatraju da su dobili dovoljno znanja o: procjeni rana (21), osnovama skrbi (16), prepoznavanju tipičnih rana (16), pokrivalima za rane (14) i kompresivnoj terapiji (20). Svi sudionici smatraju da bi edukacija o zbrinjavanju rana trebala biti standardni dio specijalizacije iz obiteljske medicine, a većina (19) misli da bi trebala trajati dulje od mjesec dana. Većina smatra edukaciju o osnovama ultrazvučnog pregleda nogu korisnom (18), kao i o osnovama endovenskog liječenja (19), te mjerenju gležanjskog indeksa (21). Svi sudionici slažu se da će im edukacija o kroničnoj venskoj i perifernoj arterijskoj bolesti pomoći u daljnjem radu. Predložili su da je potrebno više praktičnog rada u primjeni pomagala za kompresivnu terapiju. Dvoje specijalizanata predlaže staž podijeljen u dva dijela, na početku i na kraju specijalizacije kao i dodatnu edukaciju iz ultrazvuka nogu.

Zaključak: Većina specijalizanata izrazila je zadovoljstvo sadržajem i organizacijom staža. Vjeruju da će im stečena znanja i vještine pomoći u samostalnom radu s pacijentima s kroničnim ranama. Kvarnerski model je model specijalističkog usavršavanja koji koristi specifična, dodatna znanja i vještine nastavnika obiteljske medicine kako bi se edukacija osuvremenila, učinila raznolikom i kvalitetnom u brojnim područjima potreba i interesa budućih specijalista obiteljske medicine.

Specific additional education of family medicine residents according to the Kvarner model, research results

Tamara Sinožić[1,2]

1. Specialist Family Medicine Practice, Mošćenička Draga
2. Department of Family Medicine, Faculty of Medicine, University of Rijeka

Keywords: education, family medicine specialization, wound treatment
E-mail: sinozictamara@gmail.com
ORCID: 0000-0003-3174-7441

Introduction with aim: Care for patients with chronic wounds is complex, requiring specific, additional theoretical and practical education from family medicine physicians in order to meet numerous needs in care. Therefore, since 2019, as part of the family medicine specialization, in addition to theoretical classes during postgraduate studies, the possibility of an optional internship lasting one month in a family medicine practice with a specialization in wound treatment has been offered. The aim of the study is to examine the opinion of family medicine residents about such organized education during the specialization internship, called the Kvarner education model.

Methods: The research included 24 residents from the family medicine specialization program at the Faculty of Medicine, University of Rijeka from 2019 to 2024. An anonymous survey was conducted with 17 questions, 3 sociodemographic, 12 about education and 2 open questions about the program and organization of the internship.

Results: 21 residents (19 women) responded. The majority of residents were between 25 and 45 years of age (17), with more than 5 years of previous experience in family medicine (16). Participants felt that they had gained sufficient knowledge about: wound assessment (21), basic care (16), recognition of typical wounds (16), wound dressings (14), and compression therapy (20). All participants felt that education on wound care should be a standard part of family medicine residency, and most (19) thought that it should last longer than a month. Most considered education on the basics of ultrasound examination of the legs useful (18), as well as on the basics of endovenous therapy (19), and measurement of the ankle-foot index (21). All participants agreed that education on chronic venous and peripheral arterial disease would help them in their future work. They suggested that more practical work on the application of compression therapy devices is needed. Two interns propose an internship divided into two parts, at the beginning and at the end of the specialization, as well as additional education in leg ultrasound.

Conclusion: Most residents expressed satisfaction with the content and organization of the internship. They believe that the acquired knowledge and skills will help them in independent work with patients with chronic wounds. The Kvarner model is a model of specialist training that uses specific, additional knowledge and skills of family medicine teachers in order to modernize, diversify and improve education in numerous areas of need and interest of future family medicine specialists.

3. ASOCIJACIJA

Postupanje s umirućim pacijentima i/ili članovima obiteli

Ljubin Shukriev[1], Marta Tundzeva[1], Katarina Stavrikj[1], Snežana Knežević[2]

1. Centar porodične medicine, Medicinski fakultet, Sveučilište "Sv. Ćirilo I Metodije", Skoplje, R.S Makedonija,
2. Sekcija opće medicine, Srpsko lekarsko društvo, Republika Srbija

Ključne riječi: kraj života, komunikacija, pacijent koji umire
Adresa za dopisivanje: Marsal Tito br 21/2-2,1000 Skopje, RS Macedonia
E adresa: mtundzeva@gmail.com
ORCID: Ljubin Shukriev: 0000-0003-4625-8149
Marta Tundzeva: 0000-0003-2754-2371
Katarina Stavrikj: 0000-0002-8319-4554
Snezana Knezevic: 0000-0001-9137-2122

Uvod s ciljem: Komunikacija je ključna dok osoba ulazi u posljednje dane svog života. Umiranje je važno društveno i duhovno razdoblje života u kojem se događaju važne psihološke promjene. Važno je da se umiruća osoba i njezini voljeni na neki način pripreme za taj događaj i naprave sve potrebne pripreme. Cilj ovog rada je predstaviti ključne preporuke za komunikacijske protokole na kraju života.

Rasprava: Neučinkovita komunikacija u ovoj fazi može dovesti do mogućih nesporazuma i nepotrebnog stresa za voljene osobe i pacijenta. To znači skraćivanje neprocjenjivog vremena koje bi se moglo iskoristiti za međusobno oproštaj, kao i gubitak povjerenja u zdravstvene djelatnike koji svjesno i savjesno obavljaju svoje dužnosti. S iščekivanjem čina smrti, komunikacija je usmjerena prema: odluka o prisutnosti bliskog člana obitelji na kraju života, stupanj svijesti da je pacijent na kraju života, kognitivni status i problemi s govorom, jezikom ili drugim komunikacijskim potrebama. Svijest postoji, ali pitanje je koliko pacijent želi znati o prognozi bolesti i o bilo kakvim kulturnim, vjerskim ili etničkim potrebama na kraju života (duhovna domena). Načela učinkovite komunikacije obuhvaćaju nekoliko ključnih točaka: identificiranje najprikladnijeg, najprikladnijeg člana tima i raspravu o prognozi uzimajući u obzir: donošenje odluka, omogućavanje individualizirane skrbi koja mora biti dokumentirana; identificiranje multiprofesionalnog tima za raspravu o prognozi; rasprava o dijagnozi s osobom (koliko joj to dopušta) prije čina "smrti"; pružanje hidratacije, provjera s obitelji umiruće osobe postoje li posebne potrebe; razgovor s umirućom osobom, obitelji i drugim članovima tima; provjera je li to dokumentirano i pohranjeno u evidenciji; omogućavanje farmakoloških intervencija i ublažavanja boli, timski rad i koordinacija skrbi. Kada se očekuje smrt, ključno je započeti s pravovremenom komunikacijom s članovima obitelji koji su povezani i upoznati sa situacijom u trenutku smrti; konzultacije o skrbi; dijeljenje vodiča s članovima obitelji; relevantne informacije pružaju se u pisanom i usmenom obliku u pristupačnim formatima na razumljivom jeziku; uz pacijentovo dopuštenje razmatraju se ponuđene mogućnosti rituala, običaja i ceremonija.

Zaključak: Ne postoje pisana pravila o tome kada je pravi trenutak za ovaj razgovor i to je individualno. U literaturi postoji suglasnost da je neizvjesnost prognoze uobičajena prepreka komunikaciji. Razgovori bi trebali započeti rano, uz uključivanje obitelji, a ne samo pacijenata. Često se događa da se pojavi ljutnja prema zdravstvenim djelatnicima jer ih nisu pravovremeno obavijestili, s izgovorom da nisu imali vremena pozdraviti umiruću osobu na očekivani način. S druge strane, događa se da osoba i obitelj izbjegavaju čuti loše vijesti, S druge strane, drugi očekuju i traže detaljne informacije. Uočeno je da što je bolji odnos između pacijenta i zdravstvenog djelatnika, to je rasprava bolje prihvaćena i najčešće komunikacija ima pozitivne rezultate. Precizni stavovi uključuju: pružanje točnih informacija, izbjegavanje lažnog optimizma, odgovarajuće naglašavanje i rješavanje određenih strahova i stavova umiruće osobe.

LITERATURA:

1. National Clinical Guideline Centre (UK). Care of Dying Adults in the Last Days of Life. London: National Institute for Health and Care Excellence (NICE); 2015 Dec 16. (NICE Guideline, No. 31.) Available from: https://www.ncbi.nlm.nih.gov/books/NBK338140/
2. Krikorian A, Maldonado C, Pastrana T. Patient's Perspectives on the Notion of a Good Death: A Systematic Review of the Literature. J Pain Symptom Manage. 2020 Jan;59(1):152-164. doi: 10.1016/j.jpainsymman.2019.07.033. Epub 2019 Aug 9. PMID: 31404643.
3. https://palliativecare.org.au/wp-content/uploads/dlm_uploads/2018/11/PalliativeCare-National-Standards-2018_Nov-web.pdf
4. https://hospicefoundation.ie/wpcontent/uploads/2013/04/Quality_Standards_for_End_of_Life_Care_in_Hospitals.pdf
5. Baile WF, Buckman R, Lenzi R, Glober G, Beale EA, Kudelka AP. SPIKES-A six-step protocol for delivering bad news: application to the patient with cancer. Oncologist. 2000;5(4):302-11. doi: 10.1634/theoncologist.5-4-302. PMID: 10964998.

Dealing with dying patients and/or family members

Ljubin Shukriev[1], Marta Tundzeva[1], Katarina Stavrikj[1], Snežana Knežević[2]

1. Centar porodične medicine, Medicinski fakultet, Sveučilište "Sv. Ćirilo I Metodije", Skoplje, R.S Makedonija,
2. Sekcija opće medicine, Srpsko lekarsko društvo, Republika Srbija

Keywords: end of life, communication, dying patient
Correspondence address: Marsal Tito br 21/2-2,1000 Skopje, RS Macedonia
E-mail: mtundzeva@gmail.com
ORCID: Ljubin Shukriev: 0000-0003-4625-8149
Marta Tundzeva: 0000-0003-2754-2371
Katarina Stavrikj: 0000-0002-8319-4554
Snezana Knezevic: 0000-0001-9137-2122

Introduction with aim: Communication is key as a person enters the final days of their life. Dying is an important social and spiritual period of life in which significant psychological changes occur. It is important that the dying person and their loved ones prepare for the event in some way and make all arrangements. The aim of this paper is to present key recommendations for end-of-life communication protocols.

Discussion: Ineffective communication at this stage can lead to possible misunderstandings and unnecessary stress for loved ones and the sick. This means shortening the invaluable time that could be used to say goodbye to each other, as well as losing trust in healthcare staff who are consciously and conscientiously performing their duties. With the anticipation of the act of death, communication is directed towards: the decision to have a close family member present at the end of life, the degree of awareness that the patient is at the end of life, cognitive status, and problems with speech, language, or other communication needs. Awareness does exist, but the question is how much the patient wants to know about the prognosis of the disease and about any cultural, religious or ethnic needs at the end of life (spiritual domain). The principles of effective communication cover several key points: to identify the most appropriate, suitable team member and discuss the prognosis taking into account: decision-making, enabling individualized care that must be documented; to identify a multiprofessional team to discuss the prognosis, talking to the person about their diagnosis (as much as they allow) before the act of "death"; providing hydration, confirming with the dying person's family whether they have any specific requests; talking to the dying person, family, and other team members; checking that it is recorded in the documentation and kept in the file; enabling pharmacological interventions and analgesia, teamwork and coordination of care. When death is expected, it is crucial to initiate timely communication with family members who are connected and aware of the situation at the time of death; care consultations; guides are shared with family members; relevant information is provided both in written and oral form in accessible formats in understandable language; with the patient's permission, options for rituals, customs and ceremonies are considered.

Conclusion: there are no written rules for when the right moment for this conversation is and it is individual. There is agreement in the literature that the uncertainty of prognosis is a common barrier to communication. Conversations should start early, with the involvement of families, not just patients. It often happens that anger arises towards health workers for not informing them in a timely manner, with the excuse that they did not have time to greet the dying person in the expected way. On the other hand, it happens that the person and the family avoid hearing bad news. On the other hand, others expect and seek detailed information. It has been observed that the better the patient-healthcare worker relationship, the better the discussion is accepted and most often the communication has positive results. Precise attitudes include; providing accurate information, avoiding false optimism, appropriately emphasizing and addressing certain fears and attitudes of the dying person.

REFERENCES:

1. National Clinical Guideline Centre (UK). Care of Dying Adults in the Last Days of Life. London: National Institute for Health and Care Excellence (NICE); 2015 Dec 16. (NICE Guideline, No. 31.) Available from: https://www.ncbi.nlm.nih.gov/books/NBK338140/
2. Krikorian A, Maldonado C, Pastrana T. Patient's Perspectives on the Notion of a Good Death: A Systematic Review of the Literature. J Pain Symptom Manage. 2020 Jan;59(1):152-164. doi: 10.1016/j.jpainsymman.2019.07.033. Epub 2019 Aug 9. PMID: 31404643.
3. https://palliativecare.org.au/wp-content/uploads/dlm_uploads/2018/11/PalliativeCare-National-Standards-2018_Nov-web.pdf
4. https://hospicefoundation.ie/wpcontent/uploads/2013/04/Quality_Standards_for_End_of_Life_Care_in_Hospitals.pdf
5. Baile WF, Buckman R, Lenzi R, Glober G, Beale EA, Kudelka AP. SPIKES-A six-step protocol for delivering bad news: application to the patient with cancer. Oncologist. 2000;5(4):302-11. doi: 10.1634/theoncologist.5-4-302. PMID: 10964998.

Pediatric patients and their parents: How to communicate to a parent with a feverish child?

Katarina Stavrić[1], Danica Rotar Pavlič[2], Milena Kostić[3], Neda Milevska-Kostova[4]

1. Center for family medicine, Faculty of medicine, University Ss Cyril and Methodius Skopje, R.N.Macedonia
2. Medical Faculty, University of Ljubljana, Slovenija
3. Health Center Dr Dorde Kovacevic, Belgrade RS
4. Institute for Social Innovation, Skopje, RN Macedonia, Radboud University Medical Centre, Nijmegen, Nederland

Keywords: Primary care, Antibiotics, Children, Parents, Communications, Patient-provider communication
Correspondence address: Sofiska 21, Skopje, R. North Macedonia
E-mail: kstavric@hotmail.com
ORCID: Katarina Stavric: 0000-0002-8319-4554
Danica Rotar Pavlič: 0000-0001-7575-3195
Milena Kostić: 0000-0002-4684-284X
Neda Milevska-Kostova: 0000-0003-1596-9036

Introduction with aim: Inappropriate use of antibiotics can promote bacterial resistance; which is a growing public health concern. As children are amongst the highest recipients of antibiotics, understanding the drivers of parental decisions towards their children's antibiotic use is imperative for the development of strategies to assist parents in making more informed decisions. This study explored the behavior of parents and caregivers about the use of antibiotics in their febrile children and main recommendation of good communications with health professionals.

Methods: The search for eligible studies was performed in PubMed. The following subject MeSH headings were used: Primary care, Antibiotics, Children, Parents and Communications. Search limits were set for RCT, meta-analysis, systematic review and review published in last 10 years.

Discussion: International studies demonstrate that parents may persist in their request for antibiotic prescriptions from prescribers, not adhere to treatment instructions, or may use antibiotics without consulting a doctor. Parent behavior with antibiotics has been shown to be influenced by their knowledge and beliefs, the perceived severity of the child's illness, the availability of antibiotics, the child's age and the access to health care. Parents have also been found to make decisions about their children's antibiotic use based on advice from their social group or support network. Main complains of parents are driven by their anxiety. But also very often doctors think that when parents are coming in our practice that they want antibiotic. But patients want to be reassured that there is no serious illness. The method, entitled "elicit-provide-elicit" created by ECDC is a patient centered method which is adaptable to a range of clinical situations. Recent clinical trials show that the introduction of advanced communication skills based on this method in general practice allows primary care physicians to prescribe significantly less antibiotics while maintaining a high degree of patient satisfaction, without impacting patient recovery time and consultation times. Use of some tools can help to manage with uncertainty in primary care like guidelines- traffic light, clinical decision tree, point of care testing–CRP and safety netting advice. Although watchful watching has been recommended as a tool of reducing unnecessary use of antibiotics, no adherence has frequently been observed. Caregivers reported more intense negative emotions and less intense positive emotions following watchful waiting advice versus receiving an antibiotic prescription. The differences were mostly driven by false beliefs about antibiotics effectiveness (surprised, angry, and fearful) with anger being the most consistent determinant of these outcomes.

Conclusion: Effective communication between caregivers and healthcare providers is essential to reduce inappropriate antibiotic use. Clinicians should address parental anxiety and misconceptions about fever, provide clear explanations of what to monitor and when to seek care, and explore parents' concerns. Shared decision-making, reassurance based on clinical assessment and follow-up plans, and checking parental understandings are key. Communication should address both emotional and informational needs, not just medical facts.

REFERENCES:

1. Marsh SA, Byrne MK, Parsafar S (2023) What influences parental decisions about antibiotic use with their children: A qualitative study in rural Australia. PLoS ONE 18(7): e0288480. https://doi.org/10.1371/journal.pone.0288480
2. Urbane UN, Likopa Z, Gardovska D, Pavare J. Beliefs, Practices and Health Care Seeking Behavior of Parents Regarding Fever in Children. Medicina (Kaunas). 2019 Jul 22;55(7):398.
3. Verbakel, Jan Yvan et al. A clinical decision tool including a decision tree, point-of-care testing of CRP, and safety-netting advice to guide antibiotic prescribing in acutely ill children in primary care in Belgium (ARON): a pragmatic, cluster-randomised, controlled trial The Lancet, Volume 406, Issue 10512, 1599 – 1610
4. Kim, Y., Dillard, J. P., & Smith, R. A. (2019). Communicating Antibiotic Stewardship: Emotional Responses and Their Impact on Adherence. Health Communication, 35(7), 861–871. https://doi.org/10.1080/10410236.2019.1598615
5. Patient Dialogue - A practical illustration of the elicit-provide-elicit method ECDC (2019) https://antibiotic.ecdc.europa.eu/sites/default/files/media/en/eaad/Documents/antibiotics-patient-dialogue-primary-care-prescribers.pdf

Učinkovita komunikacija s bolesnicima koji izražavaju neutemeljena očekivanja u vezi s pravima

Aleksander Stepanović[1], Erika Zelko[2], Larisa Gavran[3]

1. University of Ljubljana, Faculty of Medicine, Department of Family medicine
2. Johannes Kepler University Linz; Institute for general medicine,
3. University of Zenica, School of Medicine, Department of Family medicine

Ključne riječi: komunikacija, očekivanja pacijenata, percepcija prava, upravljanje sukobima, etika
Adresa za dopisivanje:: Poljanski nasip 58, 1000 Ljubljana, Slovenija
E adresa: aleksander.stepanovic@mf.uni-lj.si
ORCID: Aleksander Stepanović: 0000-0003-4155-0001
Erika Zelko: 0000-0002-2730-9118
Larisa Gavran: 0000-0001-6035-6496

Uvod s ciljem. U kliničkoj praksi liječnici se često susreću s pacijentima koji smatraju da imaju određena prava ili pogodnosti — poput dijagnostičkih pretraga, tretmana, prioritetnog pristupa skrbi, bolovanja ili propisivanja skupih lijekova — iako ne ispunjavaju relevantne kliničke ili zakonske kriterije. Takva očekivanja često proizlaze iz dezinformacija te psiholoških potreba za aktivnu kontrolu ili sigurnošću. Mediji, komercijalno oglašavanje i prethodna iskustva sa zdravstvenim sustavom ili drugim liječnicima mogu dodatno učvrstiti ova uvjerenja, ponekad preuveličavajući koristi i umanjujući štete intervencija ili dajući pogrešne informacije o stvarnim pravima na zdravstvenu zaštitu. Takve situacije mogu dovesti do konflikata, nezadovoljstva pacijenata i emocionalnog opterećenja zdravstvenih djelatnika. Primjerena komunikacija ključna je za očuvanje povjerenja, profesionalnosti i kvalitete skrbi. Ovaj rad prikazuje ključna načela i praktične komunikacijske strategije koje liječnicima omogućuju uspostavu jasnih i profesionalnih granica, čime se smanjuje rizik eskalacije konflikta.

Metode. Primarni pristup uključuje priznavanje pacijentovog iskustva bez potvrđivanja neutemeljenog zahtjeva. Istraživanje i otkrivanje perspektiva pacijenta temeljno je za proces. Otvorena pitanja ključna su za razumijevanje pacijentovih očekivanja, prethodnih iskustava i konkretnih briga. Na primjer, postavljanjem pitanja: „Možete li mi reći što očekujete od ovog pregleda?“ ili „Što ste čuli o ovom tretmanu?“ omogućuje se nijansirano razumijevanje pacijentove perspektive. Aktivno slušanje, radoznalost i kulturna skromnost kritični su, osobito pri radu s marginaliziranim populacijama. To uključuje prepoznavanje vlastitih ograničenja u razumijevanju pacijentovog iskustva, izbjegavanje pretpostavki i angažman s istinskim interesom i poštovanjem. Prepoznavanje emocija (npr. strah, zabrinutost ili osjećaj nepravde) omogućuje pacijentima da se osjećaju saslušano, dok liječnik održava profesionalnu distancu. Strategije uključuju imenovanje emocija („Čini se da ste frustrirani“), iskazivanje empatije („Razumijem zašto bi vam ovo bilo neugodno“) i korištenje ne osuđujućeg jezika. Važno je jasno razlikovati pacijentovu želju od stvarnog prava, pri čemu se liječnik oslanja na objektivne kliničke i zakonske kriterije, a ne na osobnu prosudbu. Objašnjenja za odbijanje trebaju biti sažeta, konkretna i razumljiva. Korištenje stvarnih informacija (klinički kriteriji, propisi zdravstvenog sustava) povećava prihvaćanje odluke. Kad god je moguće, preporučljivo je ponuditi alternativnu opciju (npr. druga terapijska metoda ili redovni termin), čime se smanjuje osjećaj odbijanja i potiče suradnički odnos.

Rasprava. U slučajevima upornog pritiska ili prijetnji pritužbama, liječnici trebaju ostati mirni, pristojni i dosljedni. Pacijenti trebaju biti informirani o svom pravu na pritužbu, dok liječnik jasno navodi svoju profesionalnu obvezu postupati u skladu s utvrđenim standardima i propisima. Ponavljana objašnjenja bez napretka nisu učinkovita; u takvim je slučajevima prikladno ljubazno, ali odlučno preusmjeravanje razgovora.

Zaključak. Učinkovita komunikacija u slučajevima neutemeljenih očekivanja temelji se na kombinaciji empatije, jasnoće i stručnog autoriteta. Takav pristup smanjuje konflikte, jača povjerenje u zdravstveni sustav te štiti i bolesnika i liječnika. Sustavno razvijanje komunikacijskih vještina trebalo bi biti sastavni dio stručnog obrazovanja liječnika.

LITERATURA:

1. Hoffmann TC, Del Mar C. Patients' expectations of the benefits and harms of treatments, screening, and tests: a systematic review. JAMA Intern Med. 2015 Feb;175(2):274-86. doi: 10.1001/jamainternmed.2014.6016.
2. Effective Patient-Physician Communication. Obstet Gynecol. 2025 Dec 1;146(6):e115-e126. doi: 10.1097/AOG.0000000000006099.
3. Gilligan T, Coyle N, Frankel RM, Berry DL, Bohlke K, Epstein RM, Finlay E, Jackson VA, Lathan CS, Loprinzi CL, Nguyen LH, Seigel C, Baile WF. Patient-Clinician Communication: American Society of Clinical Oncology Consensus Guideline. J Clin Oncol. 2017 Nov 1;35(31):3618-3632. doi: 10.1200/JCO.2017.75.2311. Epub 2017 Sep 11.
4. Sarwar F, Ring D, Donovan E. Clinician communication strategies to navigate differences of opinion with patients. Patient Educ Couns. 2024 Jun;123:108185. doi: 10.1016/j.pec.2024.108185. Epub 2024 Feb 5.
5. Bailey J, Martin SA, Bangs A. Managing Difficult Patient Encounters. Am Fam Physician. 2023 Nov;108(5):494-500. PMID: 37983701.

Effective Communication with Patients Who Express Unfounded Expectations Regarding Rights

Aleksander Stepanović[1], Erika Zelko[2], Larisa Gavran[3]

1. University of Ljubljana, Faculty of Medicine, Department of Family medicine
2. Johannes Kepler University Linz; Institute for general medicine,
3. University of Zenica, School of Medicine, Department of Family medicine

Keywords: communication, patient expectations, perception of rights, conflict management, ethics
Correspondence address: Poljanski nasip 58, 1000 Ljubljana, Slovenija
E-mail: aleksander.stepanovic@mf.uni-lj.si
ORCID: Aleksander Stepanović: 0000-0003-4155-0001
Erika Zelko: 0000-0002-2730-9118
Larisa Gavran: 0000-0001-6035-6496

Introduction with aim. In clinical practice, physicians frequently encounter patients who believe they are entitled to certain rights or benefits—such as unnecessary test, treatments, priority access to care, sick leave, or the prescription of costly medications—despite not meeting the relevant clinical or legal criteria. These expectations are often driven by misinformation, psychological needs for hope, control, or reassurance. Media, commercial advertising, and prior experiences with the healthcare system or other clinicians can reinforce these beliefs, sometimes by overemphasizing benefits and underreporting harms of interventions or by presenting misleading information about entitlements and coverage. Such situations may lead to conflict, patient dissatisfaction, and emotional strain on healthcare professionals. Appropriate communication is essential to maintaining trust, professionalism, and quality of care. This paper presents key principles and practical communication strategies that enable physicians to set clear and respectful boundaries while reducing the risk of conflict escalation.

Methods. The primary approach involves acknowledging the patient's experience without validating an unfounded request. Exploring and eliciting patient perspectives is foundational. Open-ended questions are essential to uncover the patient's expectations, prior experiences, and specific concerns. For example, asking, "Can you tell me what you're hoping for from this visit?" or "What have you heard about this treatment?" allows for a nuanced understanding of the patient's viewpoint. Active listening, curiosity, and cultural humility are critical, especially when working with marginalized populations. This involves recognizing the limits of one's own knowledge about the patient's lived experience, avoiding assumptions, and engaging with genuine interest and respect. Recognizing emotions (e.g., fear, concern, or a sense of injustice) allows patients to feel heard, while the physician maintains professional distance. Strategies include naming emotions ("It sounds like you're frustrated"), empathizing ("I can see why this would be upsetting"), and using nonjudgmental language. It is important to clearly distinguish between a patient's wish and an actual entitlement, with the physician referring to objective clinical and legal criteria rather than personal judgment. Explanations for refusal should be concise, specific, and understandable. The use of actual information (clinical criteria, healthcare system regulations) increases acceptance of the decision. Whenever possible, offering an alternative option (e.g., a different therapeutic approach or a regular appointment) helps reduce the feeling of rejection and supports a collaborative relationship.

Discussion. In cases of persistent pressure or threats of complaints, physicians should remain calm, respectful, and consistent. Patients should be informed of their right to file a complaint, while the physician clearly states their professional obligation to act in accordance with established standards and regulations. Repeated explanations without progress are ineffective; in such cases, a polite but firm redirection of the conversation is appropriate.

Conclusion. Effective communication in situations involving unfounded expectations relies on a balance of empathy, clarity, and professional authority. This approach reduces conflict, strengthens trust in the healthcare system, and protects both patients and physicians. Systematic development of communication skills should be an integral part of medical education.

REFERENCES:

1. Hoffmann TC, Del Mar C. Patients' expectations of the benefits and harms of treatments, screening, and tests: a systematic review. JAMA Intern Med. 2015 Feb;175(2):274-86. doi: 10.1001/jamainternmed.2014.6016.
2. Effective Patient-Physician Communication. Obstet Gynecol. 2025 Dec 1;146(6):e115-e126. doi: 10.1097/AOG.0000000000006099.
3. Gilligan T, Coyle N, Frankel RM, Berry DL, Bohlke K, Epstein RM, Finlay E, Jackson VA, Lathan CS, Loprinzi CL, Nguyen LH, Seigel C, Baile WF. Patient-Clinician Communication: American Society of Clinical Oncology Consensus Guideline. J Clin Oncol. 2017 Nov 1;35(31):3618-3632. doi: 10.1200/JCO.2017.75.2311. Epub 2017 Sep 11.
4. Sarwar F, Ring D, Donovan E. Clinician communication strategies to navigate differences of opinion with patients. Patient Educ Couns. 2024 Jun;123:108185. doi: 10.1016/j.pec.2024.108185. Epub 2024 Feb 5.
5. Bailey J, Martin SA, Bangs A. Managing Difficult Patient Encounters. Am Fam Physician. 2023 Nov;108(5):494-500. PMID: 37983701.

How to communicate with an aggressive patient and how to remove him from the team?

Marta Tundzeva[1], LjubinShukriev[1], Mumtaz Mazicioglu[2]

1. Center of Family Medicine, Faculty of Medicine, University "St. Cyril and Methodius", Skopje, Republic of Macedonia
2. Kayseri, Turkey

Keywords: aggressive patient, coping strategies, de-escalation, communication skills
Correspondence address: Marsal Tito br 21/2-2,1000 Skopje, RS Macedonia
E-mail: mtundzeva@gmail.com
ORCID: Marta Tundzeva: 0000-0003-2754-2371
LjubinShukriev: 0000-0003-4625-8149
Mumtaz Mazicioglu: 0000-0002-6458-2906

Introduction with aim: The World Health Organization (WHO) defines violence as the intentional use of physical force or power, threatened or actual, against oneself, another person, group or community, which has the potential to result in injury, death, psychological harm or deprivation. The aim of this paper is to demonstrate communication skills for dealing with an aggressive patient and strategies for managing it.

Discussion: primary care, emergency and social services practices should provide staff with the knowledge and clinical skills to recognize and deal with situations where there is aggression towards them from a patient/family. They need to communicate effectively with an aggressive patient/family, but also with the community and security services. The recommendations are to develop awareness that in many cases when a situation becomes bitter and tense, it simply takes a person who can perceive the situation and communicate with the affected person in a tactful manner to de-escalate the escalation. This happens because two people are in conflict and each person is trying to prove themselves. Things escalate when someone is judgmental. When someone attacks you, your first response is to defend yourself. This causes stress and a rush of adrenaline. The aggressor experiences the same feelings. If you remain calm, this will lead to de-escalation. Early signs to recognize from the very beginning are tense body language (yours or the other person's), getting too close (occupying personal space), touching or grabbing, all to emphasize one's point, raised voice, rapid speech, excessive sweating, excessive hand gestures, e.g. bent feet, hands on hips, etc. Recommended tips for de-escalating a potentially violent situation are: to pay attention to the fact that the other person needs to feel heard and understood, and this reduces their stress. Attention should be shown that you are maximally concentrated; that the speaker is heard, that all physical gestures are noticed; frequent eye contact should be established, instead of looking into the eyes; interest should be shown in what he/she wants to say; should be paraphrased for what was heard; should be repeated for what was observed. E.g. "You look really stressed; please sit down."

Conclusion: tips for de-escalating verbal discussions include recommendations for avoiding defensiveness, quick reactivity, listening carefully, and coping without polemicizing, persuading, and arguing despite an attack on your evidence-based clinical practices, competence, or professionalism. It is recommended to control the tone of voice, use non-judgmental speech, quickly coordinate with the team, remove the person to another safe space for conversation, and conclude the consultation. If there is a physical attack and the situation escalates, security services are consulted and criminal proceedings are initiated.

REFERENCES:

1. National Collaborating Centre for Mental Health (UK). Violence and Aggression: Short-Term Management in Mental Health, Health and Community Settings: Updated edition. London: British Psychological Society (UK); 2015. PMID: 26180871.
2. https://healthcareindanger.org/wp-content/uploads/2018/05/Participants-Handbook-for-Medical-Students.pdf
3. Mulkey MA, Munro CL. Calming the Agitated Patient: Providing Strategies to Support Clinicians. Medsurg Nurs. 2021 Jan-Feb;30(1):9-13. PMID: 34092999; PMCID: PMC8171292.
4. Adeniyi OV, Puzi N. Management approach of patients with violent and aggressive behaviour in a district hospital setting in South Africa. S Afr Fam Pract (2004). 2021 Oct 27;63(1):e1-e7. doi: 10.4102/safp.v63i1.5393. PMID: 34797099; PMCID: PMC8603198.
5. Ruiz-Hernández JA, López-García C, Llor-Esteban B, Galián-Muñoz I, Benavente-Reche AP. Evaluation of the users violence in primary health care: Adaptation of an instrument. Int J Clin Health Psychol. 2016 Sep-Dec;16(3):295-305. doi: 10.1016/j.ijchp.2016.06.001. Epub 2016 Jun 28. PMID: 30487873; PMCID: PMC6225087.

Iskustva komunikacije između obiteljskih doktora i pacijenata u različitim zemljama

Ljubin Sukriev[1], Marta Tundjeva[1], Ljubomir Kirov[2], Mihai Sorin Iacob[3], Miloranka Petrov-Kiurski[4]

1. Asocijacija liječnika opće/obiteljske medicine jugoistočne Europe
2. Katedra opće medicine, Medicinskog fakulteta Sofija, Bugarska
3. Katedra obiteljske medicine, Medicinskog fakulteta Temišvar, Rumunjska
4. Sekcija opće medicine, Srpskog ljekarskog društva, Beograd, Srbija

Ključne riječi: komunikacija; obiteljski liječnik; primarna zdravstvena zaštita; zdravstveni sustav; pacijenti
Adresa za dopisivanje: Vl.Komarov 40/6, 1000 Skoplje,R.S.Makedonija
E adresa: sukrievlj@yahoo.com
ORCID: Ljubin Sukriev: 0000 – 0003 – 4625 – 8149
Marta Tundzeva: 0000 – 0003 – 2754 – 2371
Ljubomir Kirov: 0000 – 0001 – 6074 - 3218
Mihai Sorin Iacob: 0000-0002-7641-8687
Miloranka Petrov – Kiurski: 0000 – 0002 – 5789 - 2367

Uvod s ciljem: Komunikacija između obiteljskih liječnika i pacijenata predstavlja jedan od ključnih stupova kvalitete primarne zdravstvene zaštite (PZZ). Kvalitetna komunikacija izravno utječe na razinu povjerenja pacijenata, njihovo zadovoljstvo zdravstvenom skrbi, adherenciju terapiji te ukupne terapijske ishode. U zemljama Jugoistočne Europe, gdje su zdravstveni sustavi često opterećeni strukturnim i organizacijskim izazovima, komunikacija liječnik–pacijent dobiva dodatnu važnost. Cilj ovog rada je analizirati ključne karakteristike i obrasce komunikacije između obiteljskih liječnika i pacijenata u zemljama Jugoistočne Europe, s posebnim fokusom na Srbiju, Bugarsku, Sjevernu Makedoniju i Rumunjsku.Provedena je narativna analiza relevantnih znanstvenih radova, smjernica i institucionalnih izvješća koja se bave komunikacijom u primarnoj zdravstvenoj zaštiti, obiteljskom medicinom i organizacijom zdravstvenih sustava u navedenim zemljama.

Rasprava: Analizom su identificirani zajednički izazovi, uključujući ograničeno vrijeme za konzultacije, nedostatak formalne edukacije iz komunikacijskih vještina tijekom medicinskog obrazovanja, kao i utjecaj sustavnih i kulturoloških čimbenika na interakciju liječnik–pacijent. Istodobno, uočene su i pozitivne prakse, poput jačanja pacijent-centričnog pristupa, kontinuiranog razvoja obiteljske medicine te povećane primjene telemedicine kao alata za unapređenje komunikacije, osobito u ruralnim i slabije pokrivenim područjima.

Zaključak: Unatoč razlikama u organizaciji zdravstvenih sustava analiziranih zemalja, unapređenje komunikacijskih vještina obiteljskih liječnika kroz kontinuiranu edukaciju, strukturirane reformske procese i adekvatnu tehnološku podršku predstavlja nužan korak prema poboljšanju kvalitete primarne zdravstvene zaštite i jačanju povjerenja pacijenata u zdravstveni sustav.

LITERATURA:

1. Silistraru,I.(2020)Challenges of patient-doctor communication and educational prospectives in health studies.SAECULUM,50(2),86-96.https://doi.org/10.2478/saec-2020-0021
2. Social Sciences and Education Review.(n.d.)communication with patients:The importance of doctor-patient communication.Social Sciences and Education Research Review
3. Rugova.N.&Kasapi.V.(2025).The quality of health communication and its role in patient satisfaction in countries in transition.The case of Kosovo and North Macedonia.African journal of Biomedical research,27(15),1-10.https://doi.org/10.53555/AJBR.v27i15.1480
4. Janevska,S.Gorgjoski,A.Gerasimovska,B.kovachevikj,K.&Ristoska,K.(2025).mHealth application as a tool to assist family doctors in the management of hypertension.Academic Medical Journal
5. 5.Valentinova T.(2023)Communications skills used by Bulgarian general practitioners during the medical consultation.Journal of IMAB,29(2),4872-4876

Experiences of Communication Between Family Physicians and Patients in Different Member Countries of the Association

Ljubin Sukriev[1], Marta Tundjeva[1], Ljubomir Kirov[2], Mihai Sorin Iacob[3], Miloranka Petrov-Kiurski[4]

1. Association of general practice/ family medicine of South-East Europe
2. Department of Family Medicine, Faculty of Medicine in Sofia, Bulgaria
3. Department of Family Medicine, Faculty of Medicine in Temisvar, Romania
4. Family medicine section, Association of doctors Serbia

Keywords: communication; family physician; primary healthcare; healthcare system; patients
Correspondence address: Vl.Komarov 40/6, 1000 Skoplje,R.S.Makedonija
E-mail: sukrievlj@yahoo.com
ORCID: Ljubin Sukriev: 0000 – 0003 – 4625 – 8149
Marta Tundzeva: 0000 – 0003 – 2754 – 2371
Ljubomir Kirov: 0000 – 0001 – 6074 - 3218
Mihai Sorin Iacob: 0000-0002-7641-8687
Miloranka Petrov – Kiurski: 0000 – 0002 – 5789 - 2367

Introduction with aim: Communication between family physicians and patients represents one of the key pillars of quality primary healthcare (PHC). Effective communication directly influences patient trust, satisfaction with healthcare services, adherence to therapy, and overall therapeutic outcomes. In Southeast European countries, where healthcare systems are often burdened by structural and organizational challenges, physician–patient communication gains additional importance. The aim of this paper is to analyze the key characteristics and patterns of communication between family physicians and patients in Southeast European countries, with a particular focus on Serbia, Bulgaria, North Macedonia, and Romania.

Methods: A narrative analysis of relevant scientific literature, guidelines, and institutional reports addressing communication in primary healthcare, family medicine, and healthcare system organization in the selected countries was conducted.

Discussion: The analysis identified several common challenges, including limited consultation time, insufficient formal training in communication skills during medical education, as well as the influence of systemic and cultural factors on physician–patient interaction. At the same time, positive practices were observed, such as the strengthening of patient-centered approaches, the continuous development of family medicine, and the increased use of telemedicine as a tool to improve communication, particularly in rural and underserved areas.

Conclusion: Despite differences in the organization of healthcare systems across the analyzed countries, improving the communication skills of family physicians through continuous education, structured reform processes, and appropriate technological support represents a necessary step toward enhancing the quality of primary healthcare and strengthening patient trust in the healthcare system.

REFERENCES:

1. Silistraru,I.(2020)Challenges of patient-doctor communication and educational prospectives in health studies.SAECULUM,50(2),86-96.https://doi.org/10.2478/saec-2020-0021
2. Social Sciences and Education Review.(n.d.)communication with patients:The importance of doctor-patient communication.Social Sciences and Education Research Review
3. Rugova.N.&Kasapi.V.(2025).The quality of health communication and its role in patient satisfaction in countries in transition.The case of Kosovo and North Macedonia.African journal of Biomedical research,27(15),1-10.https://doi.org/10.53555/AJBR.v27i15.1480
4. Janevska,S.Gorgjoski,A.Gerasimovska,B.kovachevikj,K.&Ristoska,K.(2025).mHealth application as a tool to assist family doctors in the management of hypertension.Academic Medical Journal
5. 5.Valentinova T.(2023)Communications skills used by Bulgarian general practitioners during the medical consultation.Journal of IMAB,29(2),4872-4876

4. GLAVNI PROGRAM IZVAN SEKCIJA

Hrvatske smjernice za liječenje kronične opstruktivne plućne bolesti

Gordana Pavliša[1]

1. Klinički bolnički centar Zagreb, Klinika za plućne bolesti

Ključne riječi: kronična opstruktivna plućna bolest; smjernice kao tema; dijagnoza; liječenje lijekovima; plućna rehabilitacija
Adresa za dopisivanje: Jordanovac 104, Zagreb
E adresa: gordanapavlisa@yahoo.com
ORCID: 0000-0001-7162-7212

Uvod s ciljem: Kronična opstruktivna plućna bolest (KOPB) jedna je od najprevalentnijih respiratornih bolesti s progresivnim tijekom, važnim teretom morbiditeta, mortaliteta i zdravstvenih troškova. Unatoč globalnim smjernicama poput one Globalne inicijative za kroničnu opstruktivnu plućnu bolest (GOLD, engl. Global Initiative for Chronic Obstructive Lung Disease) prevođenje dokaza u nacionalnu praksu zahtijeva kontekstualizirane preporuke koje odgovaraju epidemiološkim i organizacijskim specifičnostima zdravstvenog sustava. Cilj je prikazati ključne odrednice Hrvatskih smjernica za liječenje KOPB-a koje integriraju procjenu rizika, farmakološke i nefarmakološke mjere, te poticati ranu dijagnostiku i personaliziranu terapiju u kliničkoj praksi s naglaskom na unapređenje ishoda liječenja u Hrvatskoj.

Rasprava: Optimalno liječenje KOPB-a zahtijeva kombinaciju standardiziranog postupanja utemeljenog na dokazima i individualiziranog, bolesniku prilagođenog pristupa. Ključni element predstavlja procjena težine bolesti i fenotipa na temelju intenziteta simptoma, učestalosti egzacerbacija i biomarkera, poput razine eozinofila, što omogućuje ciljano odabiranje terapije. Farmakološko liječenje temelji se na primjeni dugodjelujućih bronhodilatatora, dok se inhalacijski glukokortikoidi koriste selektivno, uzimajući u obzir učestalost pogoršanja, vrijednosti biomarkera poput eozinofilije u perifernoj krvi te prisutnost kardiovaskularnog rizika. Uz farmakoterapiju, nefarmakološke mjere, uključujući prestanak pušenja, redovitu tjelesnu aktivnost, cijepljenje i plućnu rehabilitaciju, imaju važnu ulogu u poboljšanju simptoma, smanjenju učestalosti egzacerbacija i povoljnom utjecaju na dugoročnu prognozu. Poseban naglasak stavljen je na ulogu primarne zdravstvene zaštite u ranom prepoznavanju bolesti, pravodobnom započinjanju liječenja i učinkovitom upravljanju akutnim pogoršanjima.

Zaključak: Hrvatske smjernice za KOPB nude sveobuhvatan okvir koji povezuje globalne dokaze s lokalnim kliničkim potrebama. Personalizacija terapije na temelju fenotipa, intenziteta simptoma i rizika, u kombinaciji s nefarmakološkim pristupima, može poboljšati kvalitetu skrbi i kliničke ishode. Implementacija ovih smjernica u svakodnevnu praksu zahtijeva intenzivnu edukaciju svih razina zdravstvenog sustava i bolju koordinaciju skrbi. Sustavan, prilagođen pristup poboljšava adherenciju terapiji, smanjuje učestalost egzacerbacija i povećava zadovoljstvo pacijenata, što je u konačnici cilj svakog modernog programa skrbi za bolesnike s KOPB-om.

LITERATURA:

1. Vukić Dugac A, Basioli Kasap E, Gomerčić Palčić M, Ljubičić Đ, Mladinov S i sur. Smjernice za liječenje kronične opstruktivne plućne bolesti Hrvatskoga pulmološkog društva Hrvatskoga liječničkog zbora i Hrvatskoga torakalnog društva. Liječ Vjesn 2025;147:163–186.

Croatian Guidelines for the Management of Chronic Obstructive Pulmonary Disease

Gordana Pavliša[1]

1. University Hospital Centre Zagreb, Clinic for Lung Diseases

Keywords: chronic obstructive pulmonary disease; practice guidelines as topic; diagnosis; drug therapy; pulmonary rehabilitation
Correspondence address: Jordanovac 104, Zagreb
E-mail: gordanapavlisa@yahoo.com
ORCID: 0000-0001-7162-7212

Introduction with aim: Chronic obstructive pulmonary disease (COPD) is one of the most prevalent respiratory diseases, characterized by a progressive course and a substantial burden of morbidity, mortality, and healthcare costs. Despite global recommendations such as those of the Global Initiative for Chronic Obstructive Lung Disease (GOLD), translating evidence into national clinical practice requires context-specific guidance that reflects the epidemiological and organizational characteristics of the healthcare system. The aim of this paper is to present the key components of the Croatian guidelines for the management of COPD, which integrate risk assessment, pharmacological and non-pharmacological interventions, and promote early diagnosis and personalized treatment in clinical practice, with an emphasis on improving treatment outcomes in Croatia.

Discussion: Optimal management of COPD requires a combination of standardized, evidence-based approaches and an individualized, patient-centered strategy. A key element is the assessment of disease severity and phenotype based on symptom burden, exacerbation frequency, and biomarkers such as blood eosinophil levels, enabling targeted treatment selection. Pharmacological management is based on the use of long-acting bronchodilators, while inhaled corticosteroids are applied selectively, taking into account exacerbation history, biomarker values such as peripheral blood eosinophilia, and the presence of cardiovascular risk. In addition to pharmacotherapy, non-pharmacological interventions—including smoking cessation, regular physical activity, vaccination, and pulmonary rehabilitation—play an important role in improving symptoms, reducing exacerbation frequency, and favorably influencing long-term prognosis. Particular emphasis is placed on the role of primary healthcare in early disease recognition, timely initiation of treatment, and effective management of acute exacerbations.

Conclusion: The Croatian COPD guidelines provide a comprehensive framework that links global evidence with local clinical needs. Personalization of therapy based on disease phenotype, symptom severity, and risk profile, combined with non-pharmacological approaches, has the potential to improve quality of care and clinical outcomes. Successful implementation of these guidelines in everyday practice requires intensive education across all levels of the healthcare system and improved coordination of care. A systematic, tailored approach enhances treatment adherence, reduces exacerbation rates, and increases patient satisfaction, which ultimately represents the goal of modern COPD care programs.

REFERENCES:

1. Vukić Dugac A, Basioli Kasap E, Gomerčić Palčić M, Ljubičić Đ, Mladinov S i sur. Smjernice za liječenje kronične opstruktivne plućne bolesti Hrvatskoga pulmološkog društva Hrvatskoga liječničkog zbora i Hrvatskoga torakalnog društva. Liječ Vjesn 2025;147:163–186.

Izazovi u ambulanti obiteljske medicine – Komunikacijske strategije u radu s poremećajima ličnosti

Senada Selmanović[1,2], Branislav Milić[3], Sanda Kreitmayer Peštić[1,2]

1. JZNU Dom zdravlja dr "Mustafa Šehović" Tuzla
2. Univerzitet u Tuzli
3. JU Dom zdravlja Orašje - Centar za mentalno zdravlje

Ključne riječi: poremećaj ličnosti, komunikacija, obiteljska praksa
Adresa za dopisivanje: Albina Herljevića 1, Tuzla
E adresa: selmanovic.senada@gmail.com
ORCID: Senada Selmanović: 0000-0002-7246-9057
Branislav Milić: 0009-0006-7243-554X
Sanda Kreitmayer Peštić: 0000-0002-5083-3049

Uvod s ciljem: U radu se analizira fenomen "teškog pacijenta", termina koji u obiteljskoj medicini često maskira neprepoznate poremećaje ličnosti (PL). Glavni izazov u primarnoj praksi nije samo medicinska dijagnoza, već duboko narušen terapijski odnos koji izravno utječe na kvalitetu i ishod skrbi. Cilj rada je dekonstruirati pojam "težine" pacijenta kroz prizmu specifičnih komunikacijskih vještina te ponuditi praktične alate za upravljanje kompleksnim interakcijama u ordinaciji. Hipoteza rada je da se pravovremenim prepoznavanjem strukture ličnosti i svjesnom prilagodbom liječnikova nastupa može izbjeći dijagnostički nihilizam i stigmatizacija.

Rasprava: Središnji dio rada fokusira se na kritičku analizu komunikacijskih zastoja koji nastaju zbog specifičnih obrazaca ponašanja pacijenata s PL. Literatura često zanemaruje "prazninu u znanju" koja se odnosi na praktično upravljanje kontratransferom – liječnikovom nesvjesnom emocionalnom reakcijom (poput ljutnje, bespomoćnosti ili pretjerane popustljivosti) koja može dovesti do izbjegavanja pacijenta ili nepotrebnih uputnica. Analizom se utvrđuje da pacijenti iz grupe A (paranoidni, shizoidni) zahtijevaju profesionalnu transparentnost bez prisnosti, grupa B (granični, histrionični) jasne i nepomične granice kako bi se prevenirala manipulacija, dok grupa C (anksiozni, zavisni) zahtijeva poticanje autonomije i stalno ohrabrivanje. Naglašava se važnost motivacijskog intervjua kao alata za pridobivanje povjerenja, jer ovi pacijenti često percipiraju sustav kao neprijateljsko okruženje. Sinteza izvora pokazuje da je ključni problem u ordinaciji tendencija da se "teško ponašanje" tretira kao karakterna mana, a ne kao simptom, što rezultira lošijim vođenjem somatskih komorbiditeta i skraćenim životnim vijekom ove populacije.

Zaključak: Na temelju analize i osobnog iskustva, zaključuje se da rad s pacijentima s PL zahtijeva odustajanje od intuitivne komunikacije u korist naučenih, personaliziranih strategija. Liječnik obiteljske medicine mora djelovati kao "emocionalni amortizer" koji kroz profesionalnu dosljednost i empatičku distancu kormilari kroz interpersonalne konflikte. Uspješno upravljanje komunikacijom nije samo olakšanje za liječnički tim, već nužan preduvjet za ravnopravnu zdravstvenu zaštitu pacijenata koji su zbog svoje prirode najčešće marginalizirani unutar zdravstvenog sustava.

LITERATURA:

1. Pajević I. Uvod u klasifikaciju psihijatrijskih poremećaja u MKB-11. Tuzla: Udruženje psihijatara TK; 2022.str. 271–275.
2. Restek-Petrović B. Poremećaji ličnosti u kliničkoj praksi. Zagreb: Medicinska naklada; 2020. str. 40-92
3. Pan B, Wang W. Practical implications of ICD-11 personality disorder classifications. BMC Psychiatry. 2024;24(1):185. doi: 10.1186/s12888-024-05640-3.
4. Stricker J, Jakob L, Pietrowsky R. Associations of continuum beliefs with personality disorder stigma: correlational and experimental evidence. Soc Psychiatry Psychiatr Epidemiol. 2024;59(5):823-833. doi: 10.1007/s00127-023-02543-8.

Challenges in family medicine practice – Communication strategies in the management of personality disorders

Senada Selmanović[1,2], Branislav Milić[3], Sanda Kreitmayer Peštić[1,2]

1. Public Health Center "Dr. Mustafa Šehović" Tuzla
2. University of Tuzla
3. Public Health Center Orašje - Mental Health Center

Keywords: personality disorder, communication, family practice
Correspondence address: Albina Herljevića 1, Tuzla
E-mail: selmanovic.senada@gmail.com
ORCID: Senada Selmanović: 0000-0002-7246-9057
Branislav Milić: 0009-0006-7243-554X
Sanda Kreitmayer Peštić: 0000-0002-5083-3049

Introduction with aim: This paper analyzes the phenomenon of the "difficult patient," a term in family medicine that often masks unrecognized personality disorders (PD). The primary challenge in primary care is not merely the medical diagnosis but the deeply impaired therapeutic relationship, which directly impacts the quality and outcome of care. The objective of this study is to deconstruct the concept of the "difficult" patient through the lens of specific communication skills and to offer practical tools for managing complex interactions in the office. The hypothesis is that timely recognition of personality structure and deliberate adaptation of the physician's approach can prevent diagnostic nihilism and stigmatization.

Discussion: The central part of the paper focuses on a critical analysis of communication breakdowns resulting from specific behavioral patterns in patients with PD. Literature often overlooks the "knowledge gap" regarding the practical management of countertransference—the physician's unconscious emotional reaction (such as anger, helplessness, or over-permissiveness) that can lead to patient avoidance or unnecessary referrals. Analysis shows that Cluster A patients (paranoid, schizoid) require professional transparency without intimacy; Cluster B (borderline, histrionic) require clear, firm boundaries to prevent manipulation; while Cluster C (anxious, dependent) require the encouragement of autonomy and constant reassurance. The importance of motivational interviewing as a tool for gaining trust is emphasized, as these patients often perceive the system as a hostile environment. Synthesis of sources indicates that a key problem in clinical practice is the tendency to treat "difficult behavior" as a character flaw rather than a symptom, resulting in poorer management of somatic comorbidities and a reduced life expectancy for this population.

Conclusion: Based on the analysis and personal experience, it is concluded that working with patients with PD requires a shift from intuitive communication to learned, personalized strategies. The family physician must act as an "emotional buffer" who navigates interpersonal conflicts through professional consistency and empathic distance. Successful communication management is not only a relief for the medical team but a necessary prerequisite for equitable healthcare for patients who, by their nature, are most often marginalized within the healthcare system.

REFERENCES:

1. Pajević I. Uvod u klasifikaciju psihijatrijskih poremećaja u MKB-11. Tuzla: Udruženje psihijatara TK; 2022.str. 271–275.
2. Restek-Petrović B. Poremećaji ličnosti u kliničkoj praksi. Zagreb: Medicinska naklada; 2020. str. 40-92
3. Pan B, Wang W. Practical implications of ICD-11 personality disorder classifications. BMC Psychiatry. 2024;24(1):185. doi: 10.1186/s12888-024-05640-3.
4. Stricker J, Jakob L, Pietrowsky R. Associations of continuum beliefs with personality disorder stigma: correlational and experimental evidence. Soc Psychiatry Psychiatr Epidemiol. 2024;59(5):823-833. doi: 10.1007/s00127-023-02543-8.

Komunikacijski izazovi u obiteljskoj medicini u uvjetima ograničenih resursa: iskustva s Kosova

Jona Kosova[1,3], Diar Kabashi[2,3], Betim Iballi[2]

1. Hitna služba, Centar obiteljske medicine, Prizren, Kosovo
2. Centar obiteljske medicine, Suharekë, Kosovo
3. Sveučilište u Prištini, Kosovo

Ključne riječi: komunikacija, obiteljska medicina
Adresa za dopisivanje: St. Xhevdet Doda br. 57, 20000, Prizren, Kosovo
E adresa: jona.kosova@uni-pr.edu
ORCID: Jona Kosova: 0000-0003-1763-482X
Diar Kabashi: 0009-0004-7547-2923
Betim Iballi: 0009-0000-4633-1931

Uvod s ciljem: Komunikacija predstavlja jednu od temeljnih kompetencija u obiteljskoj medicini te ima presudnu ulogu u razumijevanju bolesti, pridržavanju terapije i osiguravanju kontinuiteta zdravstvene skrbi. U zdravstvenim sustavima s ograničenim resursima komunikacijski izazovi dodatno su naglašeni zbog niske razine zdravstvene pismenosti, izraženih očekivanja pacijenata i ograničenog vremena za konzultacije. Cilj ovog istraživanja bio je analizirati najčešće komunikacijske izazove u obiteljskoj medicini na Kosovu te ispitati strategije koje liječnici koriste u suočavanju s nesporazumima, očekivanjima i nezadovoljstvom pacijenata.

Metode: Provedeno je deskriptivno pilot-istraživanje pomoću anonimnog, strukturiranog i samopopunjavajućeg upitnika među 50 liječnika obiteljske medicine zaposlenih u primarnoj zdravstvenoj zaštiti na području Kosova. Upitnik je obuhvaćao pitanja o komunikacijskim poteškoćama, reakcijama pacijenata, komunikacijskim strategijama liječnika te utjecaju komunikacijskih izazova na njihov profesionalni rad. Odgovori su prikupljeni primjenom Likertove ljestvice s pet stupnjeva te analizirani deskriptivnim statističkim metodama.

Rezultati: Ograničeno razumijevanje medicinske terminologije među pacijentima navelo je 80 % ispitanika, dok je 86 % liječnika istaknulo potrebu za čestom prilagodbom jezika i korištenjem nemedicinskih izraza. Nerealna očekivanja vezana uz tijek bolesti i vrijeme oporavka (80 %), kao i poteškoće u prihvaćanju vremena čekanja ili kontrolnih pregleda (86 %), bili su česti komunikacijski problemi. Nedovoljno pridržavanje propisane terapije zabilježeno je kod 70 % pacijenata. Komunikacijski izazovi povezani su s produljenjem trajanja pregleda (86 %) i povećanim emocionalnim opterećenjem liječnika (76 %). Najvišu učinkovitost pokazala je smirena i strukturirana komunikacija (prosječna ocjena 4,45 ± 0,55).

Zaključak: Komunikacijski izazovi predstavljaju čest, ali u velikoj mjeri upravljiv segment prakse obiteljske medicine na Kosovu. Primjena prilagodljivih i strukturiranih komunikacijskih strategija, osobito smirenog pristupa, ključna je za unapređenje razumijevanja pacijenata, očuvanje kontinuiteta skrbi i profesionalne dobrobiti liječnika u uvjetima ograničenih resursa.

Communication challenges in family medicine in resource-limited settings: experience from Kosovo

Jona Kosova[1,3], Diar Kabashi[2,3], Betim Iballi[2]

1. Emergency Unit, Family Medicine Center, Prizren, Kosovo
2. Family Medicine Center, Suharekë. Kosovo
3. Academic staff (Paraclinic teaching assistant), University of Prishtina, Kosovo

Keywords: communication, family medicine
Correspondence address: St. Xhevdet Doda br. 57, 20000, Prizren, Kosovo
E-mail: jona.kosova@uni-pr.edu
ORCID: Jona Kosova: 0000-0003-1763-482X
Diar Kabashi: 0009-0004-7547-2923
Betim Iballi: 0009-0000-4633-1931

Introduction with aim: Effective communication is a core component of family medicine practice and plays a critical role in patient understanding, treatment adherence and continuity of care. In resource-limited healthcare settings, communication challenges may be intensified by limited health literacy, high patient expectations and time constraints. The goal is to assess communication challenges in family medicine practice in Kosovo and to explore strategies used by family physicians to manage patient misunderstandings, expectations and dissatisfaction.

Methods: A descriptive pilot study was conducted using an anonymous, structured, self-administered questionnaire distributed to 50 family physicians working in primary healthcare centers across Kosovo. The questionnaire assessed communication challenges, patient reactions, physician communication strategies and the impact of communication difficulties on physicians' work. Responses were recorded using a 5-point Likert scale and analyzed descriptively using frequencies, percentages and mean ± standard deviation.

Results: Most physicians reported limited patient understanding of medical terminology (80%) and frequent need to use non-medical language (86%). Unrealistic expectations regarding recovery time (80%) and difficulty accepting waiting times or follow-up (86%) were commonly observed. Inconsistent adherence to prescribed therapy was reported by 70% of physicians. Communication challenges were associated with increased consultation time (86%) and emotional workload (76%). Adaptive communication strategies were widely used, with calm and structured communication showing the highest mean score (4.45 ± 0.55). Despite communication-related demands, most physicians reported confidence in managing difficult situations and high professional satisfaction.

Discussion: The findings align with international studies showing that low health literacy and unrealistic patient expectations are common communication challenges in family medicine. In resource-limited settings, effective and structured communication plays a key role in maintaining continuity of care and physician well-being.

Conclusion: Communication challenges are a common but manageable aspect of family medicine practice in Kosovo. Effective, adaptive communication strategies—particularly calm and structured communication—play a key role in supporting patient understanding, continuity of care and physician well-being in resource-limited settings.

5. GASTRO

Upalne bolesti crijeva: ključne činjenice za obiteljsku medicinu

Vedran Tomašić[1,2]

1. Klinika za unutarnje bolesti, KBC Sestre milosrdnice
2. Medicinski fakultet Hrvatskog katoličkog sveučilišta

Ključne riječi: upalne bolesti crijeva, aminosalicilati, glukokortikoidi, oportunističke infekcije, prevencija
Adresa za dopisivanje: Vinogradska cesta 29, 10000 Zagreb
E adresa: tomasicvedran@gmail.com
ORCID: 0000-0001-8211-3487

Uvod s ciljem. Upalne bolesti crijeva (IBD), uključujući Crohnovu bolest (CB) i ulcerozni kolitis (UC), kronični su imunološki poremećaji probavnog sustava koji najčešće pogađaju adolescente i mlađe odrasle osobe. Prevalencija raste, s procjenom kako će do 2030. godine do 1% populacije patiti od IBD. U primarnoj zdravstvenoj zaštiti skrb bolesnika s IBD-om uključuje pitanja oko modifikacije terapije, prevencije i prepoznavanja akutnih i kroničnih komplikacija kao i pitanja vezana uz prehranu, pušenje te značajnu narušenost kvalitete života. Cilj ovog narativnog pregleda je prikazati ključne aspekte ranog prepoznavanja IBD-a, diferencijalne dijagnostike, dijagnostičkih postupaka, terapijskih opcija, nuspojava te preventivnih mjera relevantnih za svakodnevnu kliničku praksu, posebice u obiteljskoj medicini.

Rasprava. IBD se prezentira proljevom, abdominalnim bolovima, umorom i nenamjernim gubitkom tjelesne mase. U djece je često prisutan i usporen rast te razvoj. Razliku od sindroma iritabilnog crijeva temeljimo na prisutnosti znakova kronične upale, poput febriliteta, anemije, noćnih simptoma i krvi u stolici. Ekstraintestinalne manifestacije, uključujući artropatije i kožne ili očne manifestacije, javljaju se u približno polovici bolesnika. Osnovne laboratorijske pretrage uključuju KKS, CRP, fekalni kalprotektin, serumske razine željeza te isključivanje infekcija i celijakije. Kalprotektin je ključan za razlikovanje upalnih od funkcionalnih poremećaja. Diferencijalna dijagnoza obuhvaća celijakiju, endometriozu i malignitete. Konzumiranje ultra-procesirane hrane povezana je crijevnim disbiozom i porastom prevalencije IBD-a. Tijekom relapsa preporučuje se nisko-vlaknasta prehrana; low-FODMAP ublažava funkcionalne simptome, a mediteranska se dijeta povezuje s boljih ishodima. Nefarmakološke mjere uključuju tjelesnu aktivnost, kvalitetan san, psihološku podršku i prestanak pušenja. U Hrvatskoj dostupne terapije obuhvaćaju aminosalicilate, glukokortikoide, imunomodulatore, biološke lijekove i JAK inhibitore uz kirurgiju. Aminosalicilati su temeljena terapija UC dok se njihova upotreba za liječenje CB ne savjetuje. Glukokortikoidi induciraju remisiju, ali dugotrajna upotreba nosi rizike osteoporoze, infekcija, metaboličkih poremećaja i adrenalne insuficijencije – stoga su steroid-sparing strategije ključne, uz rano uvođenje naprednih terapija. Nuspojave imunoloških lijekova uključuju rizik oportunističkih infekcija i reakcija na mjestu primjene. Tijekom infektivnog zbivanja preporučuje se privremena obustava imunosupresivne terapije uz postupno vraćanje nakon kliničkog poboljšanja. Anemija, jedna od najčešćih komplikacija, može biti uzrokovana sideropenijom, kroničnom upalom, deficitom vitamina B12 ili nuspojavama terapije. Metabolička bolest kostiju javlja se kao posljedica kronične upale, dugotrajne primjene kortikosteroida, malnutricije i malapsorpcije, s povećanim rizikom fraktura i osteoporoze. Preventivne mjere uključuju redovite laboratorijske kontrole, prestanak pušenja, zaštitu kože tijekom primjene azatioprina, psihološku podršku te cijepljenje protiv hepatitisa B, pneumokoka, gripe, HPV-a i herpes zostera.

Zaključak. IBD je kronična multisistemska bolest s potrebom koordiniranog pristupa i kontinuiranog praćenja od strane svih dionika zdravstvenog sustava. Rano prepoznavanje, diferencijalna dijagnoza i sustavno praćenje ključni su za optimalno liječenje i prevenciju komplikacija. Raznolik terapijski arsenal omogućuje individualizaciju, uz fokus na optimizirano korištenje aminosalicilata, minimizaciju upotrebe glukokortikoida i rano uvođenje naprednih terapija. Holistički pristup, uključujući prehranu, psihološku podršku i preventivne mjere, značajno doprinosi poboljšanju dugoročnih ishoda i kvalitete života bolesnika.

REFERENCES:

1. Paridaens K, Fullarton JR, Travis SPL. Efficacy and safety of oral Pentasa (prolonged-release mesalazine) in mild-to-moderate ulcerative colitis: a systematic review and meta-analysis. Curr Med Res Opin. 2021 Nov;37(11):1891-1900. doi: 10.1080/03007995.2021.1968813. Epub 2021 Sep 1. PMID: 34404286.
2. Feuerstein JD, Rubin DT, Aberra FN, Yarur AJ, Malter L. Appropriate Use and Complications of Corticosteroids in Inflammatory Bowel Disease: A Comprehensive Review. Clin Gastroenterol Hepatol. 2025 Nov;23(12):2068-2082. doi: 10.1016/j.cgh.2025.05.019. Epub 2025 Jun 28. PMID: 40588110.
3. Gordon H, Minozzi S, Kopylov U, Verstockt B, Chaparro M, Buskens C, Warusavitarne J, Agrawal M, Allocca M, Atreya R, Battat R, Bettenworth D, Bislenghi G, Brown SR, Burisch J, Casanova MJ, Czuber-Dochan W, de Groof J, El-Hussuna A, Ellul P, Fidalgo C, Fiorino G, Gisbert JP, Sabino JG, Hanzel J, Holubar S, Iacucci M, Iqbal N, Kapizioni C, Karmiris K, Kobayashi T, Kotze PG, Luglio G, Maaser C, Moran G, Noor N, Papamichael K, Peros G, Reenaers C, Sica G, Sigall-Boneh R, Vavricka SR, Yanai H, Myrelid P, Adamina M, Raine T. ECCO Guidelines on Therapeutics in Crohn's Disease: Medical Treatment. J Crohns Colitis. 2024 Oct 15;18(10):1531-1555. doi: 10.1093/ecco-jcc/jjae091. PMID: 38877997.
4. Kucharzik T, Ellul P, Greuter T, Rahier JF, Verstockt B, Abreu C, Albuquerque A, Allocca M, Esteve M, Farraye FA, Gordon H, Karmiris K, Kopylov U, Kirchgesner J, MacMahon E, Magro F, Maaser C, de Ridder L, Taxonera C, Toruner M, Tremblay L, Scharl M, Viget N, Zabana Y, Vavricka S. ECCO Guidelines on the Prevention, Diagnosis, and Management of Infections in Inflammatory Bowel Disease. J Crohns Colitis. 2021 Jun 22;15(6):879-913. doi: 10.1093/ecco-jcc/jjab052. Erratum in: J Crohns Colitis. 2023 Jan 27;17(1):149. doi: 10.1093/ecco-jcc/jjac104. PMID: 33730753.

Inflammatory Bowel Disease: Key Facts for Family Medicine

Vedran Tomašić[1,2]

1. Department of Internal Medicine, Sestre milosrdnice University Hospital Centre
2. Catholic University of Croatia School of Medicine

Keywords: inflammatory bowel disease, aminosalicylates, glucocorticoids, opportunistic
Correspondence address: Vinogradska cesta 29, 10000 Zagreb
E-mail: tomasicvedran@gmail.com
ORCID: 0000-0001-8211-3487

Introduction with aim. Inflammatory bowel diseases (IBD), including Crohn's disease (CD) and ulcerative colitis (UC), are chronic immunological disorders of the gastrointestinal tract primarily affecting adolescents and young adults. Prevalence is rising, with estimates projecting that up to 1% of the population will have IBD by 2030. In primary care, managing IBD patients involves therapy adjustments, prevention, recognition of acute/chronic complications, nutrition, smoking cessation, and addressing impaired quality of life. This narrative review aims to highlight key aspects of early IBD recognition, differential diagnosis, diagnostic procedures, therapeutic options, adverse effects, and preventive measures relevant to daily clinical practice, particularly in family medicine.

Discussion. IBD typically presents with diarrhea, abdominal pain, fatigue, and unintentional weight loss. In children, growth retardation is common. Differentiation from irritable bowel syndrome relies on inflammatory signs such as fever, anemia, nocturnal symptoms, and rectal bleeding. Extraintestinal manifestations (arthropathies, skin, or ocular) occur in approximately 50% of patients. Basic laboratory tests include complete blood count, CRP, fecal calprotectin, serum iron levels, and exclusion of infections or celiac disease. Calprotectin is crucial for distinguishing inflammatory from functional disorders. Differential diagnosis encompasses celiac disease, endometriosis, and malignancies. Ultra-processed food consumption links to gut dysbiosis and rising IBD prevalence. During flares, low-fiber diets are recommended; low-FODMAP alleviates functional symptoms, while Mediterranean diet associates with better outcomes. Non-pharmacological measures include exercise, quality sleep, psychological support, and smoking cessation. In Croatia, therapies include aminosalicylates, glucocorticoids, immunomodulators, biologics, JAK inhibitors, and surgery. Aminosalicylates are first-line for UC but not advised for CD. Glucocorticoids induce remission but long-term use risks osteoporosis, infections, metabolic disorders, and adrenal insufficiency—emphasizing steroid-sparing strategies and early advanced therapies. Immunological agents carry risks of opportunistic infections and injection-site reactions. During infections, temporarily suspend immunosuppression, resuming gradually post-improvement. Anemia (iron deficiency, chronic inflammation, B12 deficit, or therapy-related) and metabolic bone disease (from inflammation, steroids, malnutrition, malabsorption) are common, increasing fracture/osteoporosis risk. Preventive measures include: regular lab monitoring, smoking cessation, skin protection (azathioprine), psychological support, and vaccinations (hepatitis B, pneumococcus, influenza, HPV, herpes zoster).

Conclusion. IBD is a chronic multisystem disease requiring coordinated, continuous multidisciplinary monitoring. Early recognition, differential diagnosis, and systematic follow-up are essential for optimal treatment and complication prevention. The diverse therapeutic arsenal enables personalization, focusing on optimized aminosalicylate use, glucocorticoid minimization, and early advanced therapies. A holistic approach (nutrition, psychology, prevention) significantly improves long-term outcomes and quality of life.

REFERENCES:

1. Paridaens K, Fullarton JR, Travis SPL. Efficacy and safety of oral Pentasa (prolonged-release mesalazine) in mild-to-moderate ulcerative colitis: a systematic review and meta-analysis. Curr Med Res Opin. 2021 Nov;37(11):1891-1900. doi: 10.1080/03007995.2021.1968813. Epub 2021 Sep 1. PMID: 34404286.
2. Feuerstein JD, Rubin DT, Aberra FN, Yarur AJ, Malter L. Appropriate Use and Complications of Corticosteroids in Inflammatory Bowel Disease: A Comprehensive Review. Clin Gastroenterol Hepatol. 2025 Nov;23(12):2068-2082. doi: 10.1016/j.cgh.2025.05.019. Epub 2025 Jun 28. PMID: 40588110.
3. Gordon H, Minozzi S, Kopylov U, Verstockt B, Chaparro M, Buskens C, Warusavitarne J, Agrawal M, Allocca M, Atreya R, Battat R, Bettenworth D, Bislenghi G, Brown SR, Burisch J, Casanova MJ, Czuber-Dochan W, de Groof J, El-Hussuna A, Ellul P, Fidalgo C, Fiorino G, Gisbert JP, Sabino JG, Hanzel J, Holubar S, Iacucci M, Iqbal N, Kapizioni C, Karmiris K, Kobayashi T, Kotze PG, Luglio G, Maaser C, Moran G, Noor N, Papamichael K, Peros G, Reenaers C, Sica G, Sigall-Boneh R, Vavricka SR, Yanai H, Myrelid P, Adamina M, Raine T. ECCO Guidelines on Therapeutics in Crohn's Disease: Medical Treatment. J Crohns Colitis. 2024 Oct 15;18(10):1531-1555. doi: 10.1093/ecco-jcc/jjae091. PMID: 38877997.
4. Kucharzik T, Ellul P, Greuter T, Rahier JF, Verstockt B, Abreu C, Albuquerque A, Allocca M, Esteve M, Farraye FA, Gordon H, Karmiris K, Kopylov U, Kirchgesner J, MacMahon E, Magro F, Maaser C, de Ridder L, Taxonera C, Toruner M, Tremblay L, Scharl M, Viget N, Zabana Y, Vavricka S. ECCO Guidelines on the Prevention, Diagnosis, and Management of Infections in Inflammatory Bowel Disease. J Crohns Colitis. 2021 Jun 22;15(6):879-913. doi: 10.1093/ecco-jcc/jjab052. Erratum in: J Crohns Colitis. 2023 Jan 27;17(1):149. doi: 10.1093/ecco-jcc/jjac104. PMID: 33730753.

Lijekovima uzrokovana jetrena lezija u obiteljskoj medicini

Zvonimir Bosnić[1]

1. Katedra za obiteljsku medicinu, Medicinski fakultet u Osijeku

Ključne riječi: lijekovima uzrokovana jetrena lezija, hepatotoksičnost, farmakokinetika, polifarmacija
Adresa za dopisivanje: Zvonimir Bosnić, J. Huttlera 4, Osijek
E adresa: zbosnic191@gmail.com
ORCID: 0000-0002-4101-9782

Uvod s ciljem: Lijekovima uzrokovana jetrena lezija (DILI; engl. drug-induced liver injury) predstavlja važan, ali često nedovoljno prepoznat uzrok oštećenja jetre u kliničkoj praksi. U obiteljskoj medicini poseban izazov predstavljaju sve veća uporaba lijekova, polifarmacija te dostupnost biljnih i dijetetskih pripravaka, što povećava rizik od nastanka DILI-ja, osobito u starijoj populaciji i u kroničnih bolesnika. Razvoj jetrene lezije povezan je s farmakokinetičkim i farmakodinamskim svojstvima lijekova, uključujući metabolizam u jetri, stvaranje reaktivnih metabolita te interakcije među lijekovima. Cilj ovog preglednog rada je prikazati najčešće skupine lijekova povezane s nastankom jetrene lezije te istaknuti ulogu obiteljskog liječnika u ranom prepoznavanju i zbrinjavanju ovog stanja.

Rasprava: Proveden je pregled relevantne literature dostupne u elektroničkim bazama podataka (PubMed, Medline), s naglaskom na pregledne članke, kliničke studije i važeće smjernice vezane uz lijekovima uzrokovanu jetrenu leziju u primarnoj zdravstvenoj zaštiti. Najčešće skupine lijekova povezane s lijekovima uzrokovanom jetrenom lezijom uključuju antibiotike (osobito amoksicilin/klavulanska kiselina, nesteroidne protuupalne lijekove, antiepileptike, statine, antituberkulotike te biljne i dijetetske pripravke. Razlike u farmakokinetici i farmakodinamici, kao i genetske varijacije u enzimima jetrenog metabolizma, mogu utjecati na individualni rizik razvoja DILI-ja. Klinička prezentacija može varirati od asimptomatskog porasta jetrenih enzima do klinički značajnog hepatitisa te, rijetko, akutnog zatajenja jetre. Dijagnoza se temelji na detaljnoj anamnezi o uzimanju lijekova, isključivanju drugih uzroka oštećenja jetre te praćenju laboratorijskih parametara.

Zaključak: Poznavanje farmakokinetičkih i farmakodinamskih svojstava lijekova, uz prepoznavanje rizičnih skupina i racionalan dijagnostički pristup, ključno je za pravodobno otkrivanje lijekovima uzrokovane jetrene lezije. Obiteljski liječnik ima središnju ulogu u ranom prepoznavanju, prekidu potencijalno hepatotoksične terapije te prevenciji ozbiljnih komplikacija.

LITERATURA:

1. Hosack T, Damry D, Biswas S. Drug-induced liver injury: a comprehensive review. Therap Adv Gastroenterol. 2023 Mar 21;16:17562848231163410.
2. Keshari AC, Thitame SN, Aher AA, Keshari UC. Drug-Induced Liver Injury: Mechanisms, Diagnosis, and Management: A Review. J Pharm Bioallied Sci. 2025 May;17(Suppl 1):S55-S58.
3. Chung KF, Pavord ID. Prevalence, pathogenesis, and causes of chronic cough. Lancet. 2008;371(9621):1364-1374.
4. Tujios S, Fontana RJ. Mechanisms of drug-induced liver injury: from bedside to bench. Nat Rev Gastroenterol Hepatol. 2011 Apr;8(4):202-11.

Drug-Induced Liver Injury in Family Medicine

Zvonimir Bosnić[1]

1. Department of Family Medicine, Faculty of Medicine Osijek, J.J. Strossmayer University of Osijek

Keywords: drug-induced liver injury, hepatotoxicity, pharmacokinetics, polypharmacy, primary health care
Correspondence address: Zvonimir Bosnić, J. Huttlera 4, Osijek
E-mail: zbosnic191@gmail.com
ORCID: 0000-0002-4101-9782

Introduction with Aim: Drug-induced liver injury (DILI) represents an important, yet often underrecognized cause of liver damage in clinical practice. In primary care, increasing drug use, polypharmacy, and the availability of herbal and dietary supplements pose a particular challenge, increasing the risk of DILI, especially in elderly patients and those with chronic conditions. The development of liver injury is related to the pharmacokinetic and pharmacodynamic properties of drugs, including hepatic metabolism, formation of reactive metabolites, and drug–drug interactions. The aim of this review is to present the most common drug classes associated with liver injury and to highlight the role of the family physician in early recognition and management of this condition.

Discussion: A literature review was conducted using electronic databases (PubMed, Medline), focusing on review articles, clinical studies, and current guidelines related to drug-induced liver injury in primary healthcare. The most common drug classes associated with DILI include antibiotics (especially amoxicillin/clavulanic acid), non-steroidal anti-inflammatory drugs, antiepileptics, statins, antituberculosis agents, as well as herbal and dietary supplements. Differences in pharmacokinetics and pharmacodynamics, as well as genetic variations in hepatic metabolizing enzymes, may influence the individual risk of developing DILI. Clinical presentation ranges from asymptomatic elevation of liver enzymes to clinically significant hepatitis and, rarely, acute liver failure. Diagnosis is based on a detailed medication history, exclusion of other causes of liver injury, and monitoring of laboratory parameters.

Conclusion: Understanding the pharmacokinetic and pharmacodynamic properties of drugs, along with recognition of high-risk drug classes and a rational diagnostic approach, is crucial for timely detection of drug-induced liver injury. The family physician plays a central role in early identification, discontinuation of potentially hepatotoxic therapy, and prevention of serious complications.

REFERENCES:

1. Hosack T, Damry D, Biswas S. Drug-induced liver injury: a comprehensive review. Therap Adv Gastroenterol. 2023 Mar 21;16:17562848231163410.
2. Keshari AC, Thitame SN, Aher AA, Keshari UC. Drug-Induced Liver Injury: Mechanisms, Diagnosis, and Management: A Review. J Pharm Bioallied Sci. 2025 May;17(Suppl 1):S55-S58.
3. Chung KF, Pavord ID. Prevalence, pathogenesis, and causes of chronic cough. Lancet. 2008;371(9621):1364-1374.
4. Tujios S, Fontana RJ. Mechanisms of drug-induced liver injury: from bedside to bench. Nat Rev Gastroenterol Hepatol. 2011 Apr;8(4):202-11.

Lijekovi i gastrointestinalni simptomi

Branislava Popović[1]

1. Katedra za obiteljsku medicinu Medicinskog fakulteta Sveučilišta u Rijeci, HR

Ključne riječi: gastrointestinalni poremećaj, kolitis, lijekovi, nuspojave
Adresa za dopisivanje: Branislava Popović, Katedra za obiteljsku medicinu, Medicinski fakultet, Sveučilišta u Rijeci, Braće Branchetta 20, 51000 Rijeka, Hrvatska
E adresa: branislava.popovic@ri.t-com.hr
ORCID: 0000-0003-1671-7957

Uvod s ciljem. Gastrointestinalne (GI) tegobe čest su razlog posjeta liječniku obiteljske medicine (LOM) i gastroenterologu. Značajan udio tih tegoba povezan je s primjenom lijekova koji mogu izravno oštetiti sluznicu, mijenjati motilitet, utjecati na mikrobiotu ili povećati rizik od infekcija i krvarenja. Cilj rada je prikazati najvažnije skupine lijekova povezane s razvojem gastrointestinalnih tegoba, opisati mehanizme nastanka nuspojava te istaknuti preporuke za njihovu prevenciju.

Rasprava. Prepoznavanje medikamentozno induciranih GI simptoma ključno je za pravodobnu intervenciju, smanjenje komplikacija i optimizaciju liječenja. NSAR su vodeći uzrok medikamentoznih GI komplikacija. Inhibicija COX-1 i COX-2 dovodi do smanjene sinteze prostaglandina, što rezultira dispepsijom, erozijama, ulkusima i krvarenjem. Rizik je povećan kod starijih bolesnika, osoba s anamnezom ulkusa te kod istodobne primjene antikoagulansa, kortikosteroida i inhibitora ponovne pohrane serotonina (SSRI). Gastroprotekcija inhibitorima protonske pumpe (IPP) u ove skupine bolesnika značajno smanjuje rizik. Iako se koriste za prevenciju GI oštećenja, dugotrajna primjena IPP-a povezana je s disbiozom, povećanim rizikom od enteričnih infekcija, manjku magnezija, malapsorpcijom vitamina B12 i željeza. Preporučuje se periodična reevaluacija indikacije. Opioidi uzrokuju opioidom induciranu konstipaciju zbog smanjene peristaltike. Antikolinergici, blokatori kalcijevih kanala i triciklički antidepresivi također mogu pogoršati zatvor zbog smanjenja motiliteta glatkih mišića i sekrecije. Dokazi iz opservacijskih studija unutar populacije s dijabetesom tipa 2 ili pretilošću upućuju na česte gastrointestinalne poremećaje pri uporabi metformina i agonista/analoga glukagonu sličnog peptida 1(GLP-1RA). Potonji ima brojne učinke na GI i živčani sustav, uključujući usporavanje pražnjenja želuca, regulaciju apetita i mučnine u moždanom deblu i hipotalamusu te utjecaj na motilitet i sekreciju crijeva. U randomiziranim kontroliranim ispitivanjima i bazama podataka o prijavama nuspojava, blagi do umjereni gastrointestinalni poremećaji bili su česti, prvenstveno mučnina, bol u trbuhu, gastrointestinalni refluks, nadutost, povraćanje, proljev i zatvor u otprilike 80% pacijenata. Iskustvo iz kliničke prakse implicira da su simptomi često ovisni o dozi, opaženi tijekom razdoblja povećanja doze i imaju tendenciju smanjenja tijekom vremena. Teški gastrointestinalni simptomi, uključujući gastroparezu i crijevnu opstrukciju/ileus, rijetko su prijavljeni uz upotrebu GLP-1RA.Meta-analiza 11 ispitivanja kardiovaskularnih ishoda u kojima su sudjelovali pacijenti s dijabetesom tipa 2 koji su započeli s GLP-1RA lijekovima nije pronašla značajno povećan rizik od akutnog pankreatitisa ili raka gušterače. Širokospektralni antibiotici narušavaju crijevnu mikrobiotu,posljedično se javlja proljev, nadutost i abdominalna nelagoda. Najrizičniji su klindamicin, cefalosporini i fluorokinoloni. Posebno je važna prevencija i rano prepoznavanje Clostridioides difficile infekcije.Metotreksat, mikofenolat i biološki lijekovi mogu izazvati mučninu, proljev, hepatotoksičnost i reaktivaciju infekcija. Potrebno je redovito laboratorijsko praćenje i individualizacija terapije.

Zaključak. Redovito praćenje bolesnika koji uzimaju lijekove s mogućim GI nuspojavama važno je kako bi se na vrijeme prepoznale komplikacije i prilagodila terapija . Obiteljski liječnik treba procijeniti simptome, pratiti stupanj hidracije i nutritivnog statusa, evaluirati adherenciju i educirati bolesnika o mogućim nuspojavama u svrhu održanja kvalitete života.

LITERATURA:

1. Norman AJ, Gopakumar V. Drug-induced gastrointestinal disorders. Medicine 2024;52:3:161-68
2. Thomsen RW, Mailhac A, Løhde JB, Pottegård A. Real-world evidence on the utilization, clinical and comparative effectiveness, and adverse effects of newer GLP-1RA-based weight-loss therapies. Diabetes Obes Metab. 2025 Apr;27 Suppl 2(Suppl 2):66-88.
3. Hamdeh S, Micic D, Hanauer S. Drug-Induced Colitis. Clin Gastroenterol Hepatol. 2021 Sep;19(9):1759-1779. doi: 10.1016/j.cgh.2020.04.069. Epub 2020 Apr 30. PMID: 32360808.

Drugs and Gastrointestinal Symptoms

Branislava Popović[1]

1. Department of Family Medicine, Faculty of Medicine, University of Rijeka, Croatia

Keywords: gastrointestinal disorder, colitis, medications, side effects
Correspondence address: Branislava Popović, Faculty of Medicine, University of Rijeka, Braće Branchetta 20, 51000 Rijeka, Croatia
E-mail: branislava.popovic@ri.t-com.hr
ORCID: 0000-0003-1671-7957

Introduction with aim. Gastrointestinal (GI) complaints are among the most frequent reasons for consultations in both general practice and gastroenterology. A significant proportion of these complaints are associated with the use of medications that can directly damage the mucosa, alter motility, affect the microbiota, or increase the risk of infections and bleeding. The paper aims to present the most important groups of medications associated with the development of gastrointestinal complaints, describe the mechanisms of side effects, and highlight recommendations for their prevention.

Discussion. Recognition of drug-induced GI symptoms is essential for timely intervention, reduction of complications and optimisation of treatment. NSAIDs are the leading cause of drug-induced GI complications. Inhibition of COX-1 and COX-2 leads to reduced prostaglandin synthesis, resulting in dyspepsia, erosions, ulcers and bleeding. The risk is increased in elderly patients, those with a history of ulcers and those taking anticoagulants, corticosteroids and selective serotonin reuptake inhibitors (SSRIs). Gastroprotection with proton pump inhibitors (PPIs) in these patient groups significantly reduces the risk. Although they are used to prevent GI damage, long-term use of PPIs is associated with dysbiosis, increased risk of enteric infections, magnesium deficiency, vitamin B12 and iron malabsorption. Periodic reevaluation of the indication is recommended. Opioids cause opioid-induced constipation due to decreased peristalsis. Anticholinergics, calcium channel blockers and tricyclic antidepressants can also worsen constipation by reducing smooth muscle motility and secretion. Evidence from observational studies in populations with type 2 diabetes or obesity suggests that gastrointestinal disturbances are common with metformin and glucagon-like peptide 1 agonists/analogues (GLP-1RAs). The latter has many effects on the GI and nervous systems, including slowing gastric emptying, regulation of appetite and nausea in the brainstem and hypothalamus, and effects on intestinal motility and secretion. In randomised controlled trials and adverse event reporting databases, mild to moderate gastrointestinal disturbances were common, primarily nausea, abdominal pain, gastrointestinal reflux, flatulence, vomiting, diarrhoea and constipation in approximately 80% of patients. Clinical experience suggests that symptoms are often dose-dependent, occurring during a dose-escalation period and tending to decrease over time. Severe gastrointestinal symptoms, including gastroparesis and intestinal obstruction/ileus, have been reported rarely with GLP-1RA use. A meta-analysis of 11 cardiovascular outcome trials in patients with type 2 diabetes initiated on GLP-1RAs found no significant increased risk of acute pancreatitis or pancreatic cancer. Broad-spectrum antibiotics disrupt the gut microbiota, resulting in diarrhea, bloating and abdominal discomfort. Clindamycin, cephalosporins and fluoroquinolones are at greatest risk. Prevention and early recognition of Clostridioides difficile infection are particularly important. Methotrexate, mycophenolate and biologics can cause nausea, diarrhoea, hepatotoxicity and reactivation of infections. Regular laboratory monitoring and individualisation of therapy are necessary.

Conclusion. Regular monitoring of patients taking medications with potential GI side effects is important to identify complications on time and adjust therapy. The family physician should assess symptoms, monitor hydration and nutritional status, evaluate adherence, and educate the patient about possible side effects in order to maintain quality of life.

REFERENCES:

1. Norman AJ, Gopakumar V. Drug-induced gastrointestinal disorders. Medicine 2024;52:3:161-68
2. Thomsen RW, Mailhac A, Løhde JB, Pottegård A. Real-world evidence on the utilization, clinical and comparative effectiveness, and adverse effects of newer GLP-1RA-based weight-loss therapies. Diabetes Obes Metab. 2025 Apr;27 Suppl 2(Suppl 2):66-88.
3. Hamdeh S, Micic D, Hanauer S. Drug-Induced Colitis. Clin Gastroenterol Hepatol. 2021 Sep;19(9):1759-1779. doi: 10.1016/j.cgh.2020.04.069. Epub 2020 Apr 30. PMID: 32360808.

6. MLADI ISTRAŽIVAČI / ZNANSTVENICI

Rano otkrivanje i liječenje osteoporoze u obiteljskoj medicini

Presječni retrospektivni istraživački rad

Ivan Erstić[1], Ines Diminić Lisica[2,3,4]

1. Dom zdravlja Zadarske županije, specijalizant obiteljske medicine
2. Katedra za obiteljsku medicinu Medicinskog Fakulteta Sveučilišta u Rijeci
3. Ustanova za zdravstvenu skrb "dr. Ines Diminić Lisica", Rijeka
4. Društvo nastavnika opće/obiteljske medicine

Ključne riječi: denzitometrija; osteoporoza; frakture
Adresa za dopisivanje: Ivan Erstić, Ivana Mažuranića 28A, 23000 Zadar
E adresa: ivane1995@gmail.com
ORCID: Ivan Erstić: 0009-0005-4099-7452
Ines Diminić Lisica: 0000-0003-1981-1957

Uvod s ciljem: Osteoporoza je najčešća metabolička bolest kostiju u svijetu. To je subkliničko stanje sve dok se ne zakomplicira prijelomom. Ovi prijelomi predstavljaju veliki medicinski, osobni i financijski izazov. Hipoteze istraživanja: 1. Udio pacijenata upućenih na denzitometriju niži je od udjela pacijenata koji zadovoljavaju kriterije indikacije; 2. Udio upućenih pacijenata na denzitometriju razlikuje se po spolu i osobito je nizak u muških pacijenata. Cilj istraživanja je istražiti udio pacijenata s indikacijom za denzitometriju sukladno relevantnim svjetskim smjernicama, u svrhu dijagnoze primarne i sekundarne osteoporoze u ordinaciji obiteljske medicine te usporediti s udjelom pacijenata u kojih je realizirano upućivanje na denzitometriju.

Ispitanici i metode: Istraživanje se provelo u razdoblju od 1.1.2023. do 31.12.2024. U istraživanje su ušli pacijenti iz 3 ambulante obiteljske medicine u gradu Zadru. Od ukupnog broja pacijenata (n=5806), izabrani su pacijenti koji zadovoljavaju indikacije za denzitometriju prema ISCD (eng. International Society for Clinical Densitometry) smjernicama. Osim faktora dobi i spola, u obzir su uzeti svi relevantni čimbenici koji mogu utjecati na gustoću kostiju (pridružene bolesti, određeni lijekovi i drugi rizični faktori poput indeksa tjelesne mase, prethodnih prijeloma itd.).

Rezultati: Udio pacijenata upućenih na denzitometriju u odnosu na one koje imaju indikaciju jest nizak. Pacijenti koji imaju indikaciju prema dobi upućeni su na denzitometriju u 10% slučajeva. Posebno iznenađujući podatak jest da je tek 2% muškaraca upućenih na denzitometriju, a zadovoljavaju kriterij dobi >70 godina. Što se tiče kronične terapije i rizika od razvoja sekundarne osteoporoze, najbolji rezultati su viđeni kod pacijenata koji u kroničnoj terapiji koriste inhibitore aromataze (27% upućeno na denzitometriju), potom slijedi metotreksat (18%), a tek onda kortikosteroidi (13%), IPP (11%) i SSRI (3%). Što se tiče kroničnih bolesti koje su indikacija za denzitometriju, najbolji rezultati su viđeni kod pacijenata koji imaju karcinom dojke u anamnezi (39%), potom slijede pacijenti s RA (24%), SLE (22%) i KBB (15%).

Zaključak: Osteoporoza ostaje neprepoznato kliničko stanje, najčešće dok se ne dogodi fraktura. Obiteljski liječnici su u povlaštenoj poziciji unutar zdravstvenog sustava jer poznaju svoje pacijente, njihove komorbiditete, kroničnu terapiju, anamnezu padova/fraktura te mogu pravodobno pacijenta uputiti na denzitometriju, prevenirajući tako osteoporotičnu frakturu koja itekako narušava kvalitetu života pojedinca starije životne dobi.

LITERATURA:

1. Pauline M Camacho, Steven M Petak, Neil Binkley, Dima L Diab, Leslie S Eldeiry, Azeez Farooki, Steven T Harris, Daniel L Hurley, Jennifer Kelly, E Michael Lewiecki, Rachel Pessah-Pollack, Michael McClung, Sunil J Wimalawansa, Nelson B Watts . American Association of Clinical Endocrinologists and American College of Endocrinology clinical practice guidelines for the diagnosis and treatment of postmenopausal osteoporosis: 2016—executive summary. Endocr Pract. 2016;22:1111–1118.
2. Borgström F, Karlsson L, Ortsäter G, Norton N, Halbout P, Cooper C, Lorentzon M, McCloskey EV, Harvey NC, Javaid MK, Kanis JA; International Osteoporosis Foundation. Fragility fractures in Europe: burden, management and opportunities. Arch Osteoporos. 2020 Apr 19;15(1):59. doi: 10.1007/s11657-020-0706-y.
3. Cosman F, de Beur SJ, LeBoff MS, et al. Erratum to: clinician's guide to prevention and treatment of osteoporosis. Osteoporos Int. 2015;26:2045–2047
4. Svedbom A, Borgstöm F, Hernlund E, et al. Quality of life for up to 18 months after low-energy hip, vertebral, and distal forearm fractures-results from the ICUROS. Osteoporos Int. 2018;29(3):557–566. doi: 10.1007/s00198-017-4317-4.

Extended Abstract
Young researchers / scientists

Early detection and treatment of osteoporosis in family medicine

A cross-sectional retrospective research paper

Ivan Erstić[1], Ines Diminić Lisica[2,3,4]

1. Zadar County Health Center
2. Faculty of Medicine, University of Rijeka, Department of Family Medicine
3. Health care facility "dr. Ines Diminić Lisica", Rijeka
4. Association of teachers in general practice/family medicine

Keywords: densitometry; osteoporosis; fractures
Correspondence address: Ivan Erstić, Ivana Mažuranića 28A, 23000 Zadar
E-mail: ivane1995@gmail.com
ORCID: Ivan Erstić: 0009-0005-4099-7452
Ines Diminić Lisica: 0000-0003-1981-1957

Introduction with aim: Osteoporosis is the most common metabolic bone disease in the world. It is a subclinical condition until it is complicated by a fracture. These fractures represent a major medical, personal and financial challenge. Research hypotheses: 1. The proportion of patients referred for densitometry is lower than the proportion of patients who meet the indication criteria; 2. The proportion of patients referred for densitometry differs by gender and is particularly low in male patients. The goal of the research is to investigate the proportion of patients with an indication for densitometry in accordance with the relevant global guidelines, for the purpose of diagnosing primary and secondary osteoporosis in a family medicine practice, and to compare it with the proportion of patients in whom referral for densitometry was realized.

Respondents and methods: The research was conducted in the period from January 1, 2023. until 31.12.2024. The study included patients from 3 family medicine clinics in the city of Zadar. From the total number of patients (n=5806), patients who meet the indications for densitometry according to the ISCD (International Society for Clinical Densitometry) guidelines were selected. In addition to age and gender factors, all relevant factors that can affect bone density (associated diseases, certain medications and other risk factors such as body mass index, previous fractures, etc.) were taken into account.

Results: The proportion of patients referred for densitometry compared to those who have an indication is low. Patients who have an indication based on age are referred for densitometry in 10% of cases. A particularly surprising fact is that only 2% of men are referred for densitometry, and they meet the criteria of age >70 years. Regarding chronic therapy and the risk of developing secondary osteoporosis, the best results were seen in patients who used aromatase inhibitors in chronic therapy (27% referred for densitometry), followed by methotrexate (18%), and only then corticosteroids (13%), PPIs (11%) and SSRIs (3%). Regarding chronic diseases that are an indication for densitometry, the best results were seen in patients with a history of breast cancer (39%), this is followed by patients with RA (24%), SLE (22%) and CKD (15%).

Conclusion: Osteoporosis remains an unrecognized clinical condition, most often until a fracture occurs. Family physicians are in a privileged position within the health system because they know their patients, their comorbidities, chronic therapy, history of falls/fractures and can refer the patient for densitometry in a timely manner, thus preventing osteoporotic fractures, which greatly impair the quality of life of an elderly individual.

REFERENCES:

1. Pauline M Camacho, Steven M Petak, Neil Binkley, Dima L Diab, Leslie S Eldeiry, Azeez Farooki, Steven T Harris, Daniel L Hurley, Jennifer Kelly, E Michael Lewiecki, Rachel Pessah-Pollack, Michael McClung, Sunil J Wimalawansa, Nelson B Watts . American Association of Clinical Endocrinologists and American College of Endocrinology clinical practice guidelines for the diagnosis and treatment of postmenopausal osteoporosis: 2016—executive summary. Endocr Pract. 2016;22:1111–1118.
2. Borgström F, Karlsson L, Ortsäter G, Norton N, Halbout P, Cooper C, Lorentzon M, McCloskey EV, Harvey NC, Javaid MK, Kanis JA; International Osteoporosis Foundation. Fragility fractures in Europe: burden, management and opportunities. Arch Osteoporos. 2020 Apr 19;15(1):59. doi: 10.1007/s11657-020-0706-y.
3. Cosman F, de Beur SJ, LeBoff MS, et al. Erratum to: clinician's guide to prevention and treatment of osteoporosis. Osteoporos Int. 2015;26:2045–2047
4. Svedbom A, Borgström F, Hernlund E, et al. Quality of life for up to 18 months after low-energy hip, vertebral, and distal forearm fractures-results from the ICUROS. Osteoporos Int. 2018;29(3):557–566. doi: 10.1007/s00198-017-4317-4.

Gležanjski indeks u žena reproduktivne i postmenopauzalne dobi: povezanost sa životnim navikama

Dejhalla Ema[1,2], Zahirović David[2,3], Zavidić Tina[2,4], Katarina Sabadi Šestan[5], Sinožić Tamara[2,6]

1. Zdravstvena ustanova za medicinu rada Rijeka-Ordinacija obiteljske medicine, Rijeka, Hrvatska
2. Medicinski fakultet Sveučilišta u Rijeci, Rijeka, Hrvatska
3. Dom zdravlja Primorsko-goranske županije-Ginekologija i opstetricija, Rijeka, Hrvatska
4. Istarski domovi zdravlja, Specijalistička ordinacija obiteljske medicine Tina Zavidić, dr. med., Lupoglav, Hrvatska
5. Dom zdravlja Primorsko-goranske županije - Obiteljska medicina, Rijeka, Hrvatska
6. Specijalistička ordinacija obiteljske medicine Tamara Sinožić, dr.med., Mošćenička Draga, Hrvatska

Ključne riječi: gležanjski indeks; periferna arterijska bolest; postmenopauza; reprodukcija; životne navike
Adresa za dopisivanje: Ema Dejhalla, dr.med., Verdieva 8
E adresa: emadejhalla@gmail.com
ORCID: Dejhalla Ema: 0000-0003-0873-1257
Zahirović David: 0000-0003-1747-4926
Zavidić Tina https: 0000-0002-5365-0002
Sinožić Tamara: 0000-0003-3174-7441

Uvod s ciljem: Kardiovaskularne bolesti (KVB) vodeći su uzrok preuranjene smrti i invaliditeta, a ateroskleroza je njihov najčešći uzrok. Periferna arterijska bolest (PAB) kronično je stanje uzrokovano aterosklerozom. Rizični čimbenici uključuju dijabetes, pušenje, pretilost, hipertenziju, hiperlipidemiju i starenje. Gležanjski indeks (GI) jednostavna je i neinvazivna metoda za procjenu PAB-a te marker sistemske ateroskleroze. Cilj rada bio je analizirati povezanost vrijednosti GI-a s tjelesnom aktivnošću, prehranom, sociodemografskim čimbenicima, indeksom tjelesne mase (ITM), pušenjem, kroničnom terapijom, osobnom anamnezom i prisutnošću menstruacije.

Metodologija: Provedeno je multicentrično presječno istraživanje od studenog 2024. do prosinca 2024. godine u devet ordinacija obiteljske medicine u Primorsko-goranskoj i Istarskoj županiji. Sudjelovalo je 437 ispitanica. Mjereni su GI, arterijski tlak, visina i tjelesna masa, a korišteni su upitnik općih podataka, upitnici MEDAS te IPAQ ili PASE.

Rezultati: Normalne vrijednosti GI-a češće su zabilježene kod žena s menstruacijom (98,3%). Visoka razina tjelesne aktivnosti uočena je kod 25% visoko obrazovanih žena. U PGŽ-u je pretilost bila učestalija kod manje aktivnih ispitanica, dok je niska usklađenost s mediteranskom prehranom češća kod visoko obrazovanih (53,8%). U IŽ-u starije žene i umirovljenice češće su se pridržavale mediteranske prehrane. Veća usklađenost s mediteranskom prehranom bila je povezana s nižim arterijskim tlakom.

Rasprava: Rezultati potvrđuju povezanost dobi, menopauzalnog statusa, tjelesne aktivnosti i prehrambenih navika s kardiovaskularnim pokazateljima. Postmenopauzalne žene češće su imale odstupanja u vrijednostima GI-a, što upućuje na gubitak zaštitnog učinka estrogena. Viši ITM bio je povezan s povišenim krvnim tlakom, ali ne i s GI-om, dok je tjelesna aktivnost imala povoljan učinak na tjelesnu masu i krvni tlak. Regionalne razlike ukazuju na nepovoljnije vaskularne pokazatelje u Istarskoj županiji, vjerojatno povezane sa starijom populacijom i životnim navikama.

Zaključak: Žene reproduktivne dobi imaju povoljnije vaskularne pokazatelje, što se može pripisati zaštitnom učinku estrogena. Nalazi naglašavaju važnost ranog probira i ciljane prevencije, osobito kod žena u postmenopauzi, radi smanjenja rizika od razvoja kardiovaskularnih bolesti.

LITERATURA:

1. Martin SS, Aday AW, Almarzooq ZI i sur. American Heart Association Council on Epidemiology and Prevention Statistics Committee and Stroke Statistics Subcommittee. 2024 Heart Disease and Stroke Statistics: A Report of US and Global Data From the American Heart Association. Circulation. 2024;149(8):e347–e913.
2. Aboyans V, Ricco JB, Bartelink MEL, et al. 2017 ESC Guidelines on the Diagnosis and Treatment of Peripheral Arterial Diseases, in collaboration with the European Society for Vascular Surgery (ESVS). Eur Heart J. 2018;39(9):763–816.
3. Martínez-González MA, Gea A, Ruiz-Canela M. The Mediterranean Diet and Cardiovascular
4. Reckelhoff JF. Gender differences in the regulation of blood pressure. Hypertension. 2001;37:1199–1208.

Ankle-brachial index in women of reproductive and postmenopausal age: association with lifestyle habits

Dejhalla Ema[1,2], Zahirović David[2,3], Zavidić Tina[2,4], Katarina Sabadi Šestan[5], Sinožić Tamara[2,6]

1. Medical Center for Occupational Health – Family Medicine Practice, Rijeka, Croatia
2. Faculty of Medicine, University of Rijeka, Rijeka, Croatia
3. Health center of Primorje-Gorski Kotar county – Gynecology and Obstetrics, Rijeka, Croatia
4. Istrian Health Centers, Specialist Family Medicine Practice Tina Zavidić, MD, Lupoglav, Croatia
5. Health center of Primorje-Gorski Kotar county – Family Medicine, Rijeka, Croatia
6. Specialist Family Medicine Practice Tamara Sinožić, MD, Mošćenička Draga, Croatia

Keywords: Ankle brachial index; Life style; Peripheral arterial disease; Postmenopause; Reproduction
Correspondence address: Ema Dejhalla, dr.med., Verdieva 8
E-mail: emadejhalla@gmail.com
ORCID: Dejhalla Ema: 0000-0003-0873-1257
Zahirović David: 0000-0003-1747-4926
Zavidić Tina https: 0000-0002-5365-0002
Sinožić Tamara: 0000-0003-3174-7441

Introduction with Aim: Cardiovascular diseases (CVD) are the leading cause of premature mortality and disability, with atherosclerosis being their most common underlying cause. Peripheral arterial disease (PAD) is a chronic condition caused by atherosclerosis. Risk factors include diabetes, smoking, obesity, hypertension, hyperlipidemia, and aging. The ankle-brachial index (ABI) is a simple, non-invasive method for assessing PAD and serves as a marker of systemic atherosclerosis. The aim of this study was to analyze the association between ABI values and physical activity, diet, sociodemographic factors, body mass index (BMI), smoking, chronic therapy, personal medical history, and the presence of menstruation.

Methodology: A multicenter cross-sectional study was conducted from November 2024 to December 2024 in nine family medicine practices in Primorje-Gorski Kotar County and Istria County. A total of 437 women participated in the study. ABI, blood pressure, height, and body weight were measured. Participants completed a general information questionnaire, the MEDAS questionnaire, and the IPAQ or PASE questionnaires.

Results: Normal ABI values were more frequently observed in women with menstruation (98.3%). A high level of physical activity was recorded in 25% of highly educated women. In Primorje-Gorski Kotar County, obesity was more prevalent among less physically active participants, while low adherence to the Mediterranean diet was more common among highly educated women (53.8%). In Istria County, older women and retirees showed greater adherence to the Mediterranean diet. Higher adherence to the Mediterranean diet was associated with lower blood pressure values.

Discussion: The results confirm an association between age, menopausal status, physical activity, dietary habits, and cardiovascular indicators. Postmenopausal women more frequently exhibited abnormal ABI values, suggesting a loss of the protective effect of estrogen. Higher BMI was associated with elevated blood pressure but not with ABI values, while physical activity had a beneficial effect on body weight and blood pressure. Regional differences indicate less favorable vascular indicators in Istria County, likely related to an older population and lifestyle habits.

Conclusion: Women of reproductive age have more favorable vascular indicators, which may be attributed to the protective effect of estrogen. The findings emphasize the importance of early screening and targeted preventive measures, particularly for postmenopausal women, to reduce the risk of cardiovascular diseases.

REFERENCES:

1. Martin SS, Aday AW, Almarzooq ZI i sur. American Heart Association Council on Epidemiology and Prevention Statistics Committee and Stroke Statistics Subcommittee. 2024 Heart Disease and Stroke Statistics: A Report of US and Global Data From the American Heart Association. Circulation. 2024;149(8):e347–e913.
2. Aboyans V, Ricco JB, Bartelink MEL, et al. 2017 ESC Guidelines on the Diagnosis and Treatment of Peripheral Arterial Diseases, in collaboration with the European Society for Vascular Surgery (ESVS). Eur Heart J. 2018;39(9):763–816.
3. Martínez-González MA, Gea A, Ruiz-Canela M. The Mediterranean Diet and Cardiovascular
4. Reckelhoff JF. Gender differences in the regulation of blood pressure. Hypertension. 2001;37:1199–1208.

Sindrom pekućih usta

Adriana Babić[1]

1. Dom zdravlja Zagreb – Istok

Ključne riječi: sindrom pekućih usta, liječnici opće prakse, liječenje boli
Adresa za dopisivanje: Adriana Babić, Švarcova 20, 10000 Zagreb
E adresa: babic.adriana2@gmail.com
ORCID: 0009-0003-9529-6376

Uvod s ciljem: Sindrom pekućih usta (engl. burning mouth syndrome, BMS) kronični je bolni poremećaj karakteriziran upornim intraoralnim osjećajem peckanja uz odsutnost klinički vidljivih abnormalnosti sluznice ili laboratorijskih nalaza. Bolnost, žarenje ili peckanje zahvaćaju jezik, vrh jezika, nepce ili usnice. Predominantno se javlja u ženskoj populaciji, najčešće u perimenopauzi ili postmenopauzi. Dijagnoza je klinička i zahtijeva isključivanje lokalnih, sistemskih i psiholoških uzroka. BMS klasificira se kao primarni (idiopatski) ili sekundarni poremećaj. Simptomi uključuju disgeuziju, disesteziju i kserostomiju. Cilj ovog rada bio je prikazati najčešće uzroke, simptome, dijagnostičke mogućnosti te liječenje koji mogu dovesti do manifestacije sindroma pekućih usta, a s kojima se liječnik obiteljske medicine susreće u svakodnevnoj kliničkoj praksi.

Rasprava: Patofiziologija nastanka ovog sindroma je multifaktorijalna, a uključuje periferne i centralne neuropatske mehanizme, hormonalne promjene te psihološke čimbenike poput anksioznosti i depresije. Periferna neuropatija malih vlakana očituje se smanjenom gustoćom intraepitelnih živčanih vlakana na jeziku i usnoj sluznici, što dovodi do abnormalne senzorne signalizacije i spontane boli. Središnji mehanizmi uključuju nedostatnu inhibitornu neurotransmisiju i promijenjenu modulaciju boli, uključujući dopaminergičku hipofunkciju u bazalnim ganglijima i oštećene reflekse moždanog debla što doprinosi boli i senzornim poremećajima. Nedostatak estrogena kod žena u postmenopauzi povećava osjetljivost živaca oralne sluznice zbog neuropatskih promjena nastalih uslijed oksidativnog stresa. Psihološki komorbiditeti poput anksioznosti i depresije također mogu pogoršati simptome putem promijenjene percepcije boli. Dijagnostički kriteriji za BMS prema Međunarodnoj klasifikaciji glavobolja (engl. The International Classification of Headache Disorders, ICHD-3) uključuju: svakodnevnu bol u ustima koja traje ≥2h tijekom više od 3 mjeseca, osjet žarenja u ustima te normalan izgled oralne sluznice i pozitivna senzorna testiranja ako su provedena. Prije postavljanja dijagnoze važno je isključiti diferencijalne dijagnoze poput herpes simpleksa, aftoznog stomatitisa, alergijskog kontaktnog stomatitisa, boli povezane sa protezama, nutritivnih nedostataka (vitamin B6, vitamin B12, željezo, cink, folati), šećerne bolesti, kandidijaze, laringofaringealnog refluksa, abnormalnosti štitnjače te polipragmazije. Najčešći lijekovi koji uzrokuju ili pogoršavaju simptome sindroma pekućih usta su inhibitori angiotenzin konvertirajućeg enzima, blokatori angiotenzinskih receptora te benzodiazepini. Temeljita anamneza, pregled i ciljane pretrage ključni su za isključivanje sekundarnih uzroka prije početka simptomatske terapije. Ne postoje specifični dijagnostički testovi za dokazivanje sindroma pekućih usta. Kvantitativno senzorno testiranje može pokazati smanjene osjete, biopsija jezika može otkriti smanjenu gustoću malih živčanih vlakana. Liječenje temeljnog uzroka boli u ustima, ako se pronađe, obično rezultira remisijom simptoma. Lokalni klonazepam otopljen u slini i zadržan u ustima nekoliko minuta prije iskašljavanja najučinkovitija je kratkotrajna intervencija. Gabapentin i pregabalin predlažu se kao početna farmakološka terapija uz alfa-lipoičnu kiselinu.

Zaključak: Nedostaju standardizirani protokoli liječenja i podaci o dugoročnim ishodima liječenja sindroma pekućih usta. U svakodnevnoj praksi bitno je posumnjati na sindrom pekućih usta te obratiti pažnju na žene u postmenopauzi i starije osobe na višestrukoj kroničnoj terapiji koje dulje vrijeme osjećaju žarenje u ustima. Prema potrebi preporučuje se koordinacija skrbi sa stomatologom, neurologom i stručnjakom za mentalno zdravlje.(1–5)

LITERATURA:

1. Ritchie A, Kramer JM. Recent Advances in the Etiology and Treatment of Burning Mouth Syndrome. J Dent Res. 2018.;97(11):1193–9.
2. Sangalli L, Mirfarsi S, Kramer JM, Eisa E, Miller CS. Managing Burning Mouth Syndrome: Current and Future Directions. Drugs. 2025.;85(9):1109–31.
3. Charles CH, Sajid AK, Garza I. "Overview of craniofacial pain:Burning mouth syndrome." Iz: Up to Date. Burton D. Rose (Ed). Dostupno na: https://www.uptodate.com/contents/overview-of-craniofacial-pain?source=history#H1651832 [pristupljeno 28. studeni 2025.]
4. Imamura Y, Shinozaki T, Okada-Ogawa A, Noma N, Shinoda M, Iwata K, i sur. An updated review on pathophysiology and management of burning mouth syndrome with endocrinological, psychological and neuropathic perspectives. J Oral Rehabil. 2019.;46(6):574–87.
5. Azzi L, Veronesi G, Tagliabue A, Croveri F, Maurino V, Reguzzoni M, i sur. Is there an association between drugs and burning mouth syndrome? A case-control study. Oral Dis. 2019.;25(6):1634–44.

Extended Abstract
Young researchers / scientists

Burning mouth syndrome

Adriana Babić[1]

1. Health Center Zagreb – East

Keywords: burning mouth syndrome, general practitioners, pain management
Correspondence address: Adriana Babić, Švarcova 20, 10000 Zagreb
E-mail: babic.adriana2@gmail.com
ORCID: 0009-0003-9529-6376

Introduction with aim: Burning mouth syndrome (BMS) is a chronic painful disorder characterized by a persistent intraoral burning sensation in the absence of clinically visible mucosal abnormalities or laboratory findings. The pain, burning or stinging affects the tongue, tip of the tongue, palate or lips. It occurs predominantly in the female population, most often in the perimenopause or postmenopause. The diagnosis is clinical and requires the exclusion of local, systemic and psychological causes. BMS is classified as a primary (idiopathic) or secondary disorder. Symptoms include dysgeusia, dysesthesia and xerostomia. The aim of this paper was to present the most common causes, symptoms, diagnostic options and treatment that can lead to the manifestation of burning mouth syndrome, which family medicine physicians encounter in everyday clinical practice.

Discussion: The pathophysiology of this syndrome is multifactorial, involving peripheral and central neuropathic mechanisms, hormonal changes, and psychological factors such as anxiety and depression. Peripheral small fiber neuropathy is characterized by reduced intraepithelial nerve fiber density in the tongue and oral mucosa, leading to abnormal sensory signaling and spontaneous pain. Central mechanisms include deficient inhibitory neurotransmission and altered pain modulation, including dopaminergic hypofunction in the basal ganglia and impaired brainstem reflexes, which contribute to pain and sensory disturbances. Estrogen deficiency in postmenopausal women increases the sensitivity of the nerves of the oral mucosa due to neuropathic changes resulting from oxidative stress. Psychological comorbidities such as anxiety and depression may also exacerbate symptoms through altered pain perception. Diagnostic criteria for BMS according to the International Classification of Headache Disorders (ICHD-3) include: daily oral pain lasting ≥2 h for more than 3 months, burning sensation in the mouth and normal appearance of the oral mucosa and positive sensory tests if performed. Before making a diagnosis, it is important to exclude differential diagnoses such as herpes simplex, aphthous stomatitis, allergic contact stomatitis, denture-related pain, nutritional deficiencies (vitamin B6, vitamin B12, iron, zinc, folate), diabetes, candidiasis, laryngopharyngeal reflux, thyroid abnormalities and polypharmacy. The most common drugs that cause or worsen the symptoms of burning mouth syndrome are angiotensin-converting enzyme inhibitors, angiotensin receptor blockers and benzodiazepines. A thorough history, examination and targeted tests are essential to exclude secondary causes before starting symptomatic therapy. There are no specific diagnostic tests for burning mouth syndrome. Quantitative sensory testing may demonstrate decreased sensation, and tongue biopsy may reveal decreased small nerve fiber density. Treatment of the underlying cause of the oral pain, if found, usually results in remission of symptoms. Topical clonazepam dissolved in saliva and held in the mouth for a few minutes before coughing is the most effective short-term intervention. Gabapentin and pregabalin are suggested as initial pharmacological therapy in addition to alpha-lipoic acid.

Conclusion: Standardized treatment protocols and data on long-term outcomes of burning mouth syndrome are lacking. In everyday practice, it is important to suspect burning mouth syndrome and pay attention to postmenopausal women and older adults on multiple chronic medications who experience a burning sensation in the mouth for an extended period of time. Coordination of care with a dentist, neurologist, and mental health professional is recommended as needed.(1–5)

REFERENCES:

1. Ritchie A, Kramer JM. Recent Advances in the Etiology and Treatment of Burning Mouth Syndrome. J Dent Res. 2018.;97(11):1193–9.
2. Sangalli L, Mirfarsi S, Kramer JM, Eisa E, Miller CS. Managing Burning Mouth Syndrome: Current and Future Directions. Drugs. 2025.;85(9):1109–31.
3. Charles CH, Sajid AK, Garza I. "Overview of craniofacial pain:Burning mouth syndrome." Iz: Up to Date. Burton D. Rose (Ed). Dostupno na: https://www.uptodate.com/contents/overview-of-craniofacial-pain?source=history#H1651832 [pristupljeno 28. studeni 2025.]
4. Imamura Y, Shinozaki T, Okada-Ogawa A, Noma N, Shinoda M, Iwata K, i sur. An updated review on pathophysiology and management of burning mouth syndrome with endocrinological, psychological and neuropathic perspectives. J Oral Rehabil. 2019.;46(6):574–87.
5. Azzi L, Veronesi G, Tagliabue A, Croveri F, Maurino V, Reguzzoni M, i sur. Is there an association between drugs and burning mouth syndrome? A case-control study. Oral Dis. 2019.;25(6):1634–44.

Komunikacija-početak svakog liječenja

Sara Maroević[1], Sanja Maroević[2], Marija Orel[2]

1. Dom zdravlja Zagreb-Zapad
2. Klinika za psihijatriju Vrapče

Ključne riječi: empatija, komunikacija, liječnik obiteljske medicine
Adresa za dopisivanje: Sara Maroević, dr.med., Vrtlarska ulica 1a, 10000 Zagreb
E adresa: sara.maroevic@gmail.com
ORCID: Sara Maroević: 0009-0001-9032-306X
Sanja Maroević: 0009-0004-6621-472X
Marija Orel: 0009-0003-6544-1827

Uvod s ciljem: Komunikacija je temelj svakog odnosa između liječnika obiteljske medicine (LOM) i pacijenta, prethodi svakom postupku i ishodu. Kroz kvalitetnu komunikaciju uspostavlja se odnos povjerenja, sigurnosti i razumijevanja, bez kojeg liječenje nije moguće. Cilj ovog rada je istaknuti važnost komunikacije u ambulanti LOM koja može olakšati svakodnevni rad.

Rasprava: Komunikacija je prijenos poruka od pošiljatelja primatelju, u ovom slučaju od LOM pacijentu. Vrste komunikacije dijele se na verbalne (posredstvo jezika), neverbalne (geste, govor tijela) i paraverbalne (intonacija i visina glasa, glasnoća, tečnost govora, šutnja). Pri uvažavanju potreba obje strane nastaje kvalitetan terapijski odnos. Što je bitno liječniku: jasne i točne informacije, suradnja i iskrenost pacijenta, strukturirana komunikacija, povjerenje i realna očekivanja. Što je bitno pacijentu: aktivno slušanje i shvaćanje, empatija i poštovanje, jasne i razumljive informacije, uključenost u odluke, dosljednost i dostupnost. U stvarnosti mnoge od ovih točaka nisu zadovoljene i prisutne su smetnje u komunikaciji. Biti bolestan znači biti drugačiji nego što si do tada bio. Bolest mijenja način funkcioniranja osobe, pogotovo kada je riječ o malignim bolestima. Jedan od najtežih dijelova rada liječnika je priopćavanje teške dijagnoze pacijentu. Razgovor treba započeti dobrom pripremom uvjeta za razgovor (osigurati privatnost, bez prekidanja razgovora, održavanje kontakta očima). Liječnik treba postavljati pitanja pacijentu kako bi procijenio uvid pacijenta u njegovo stanje i znanje o bolesti. Tijekom razgovora potrebno je pitati pacijenta koliko informacija želi dobiti o svojem stanju. Pri dijeljenju loših vijesti preporučeno je korištenje što jednostavnijih izraza, davanje informacija u manjim dijelovima i povremeno provjeravanje učinka na pacijenta. Vrlo je bitno uvažiti pacijentove emocije i pružiti podršku empatičnim odgovornom. Zadnji dio razgovora svodi se na planiranje liječenja i dostupnosti liječnika za sve upite. Priopćavanje teških vijesti nije jednokratan zadatak, to je proces koji se nastavlja kroz više susreta, pogotovo u ambulanti LOM gdje odnos liječnika i pacijenta traje godinama. Pacijent u takvim situacijama ne prima samo informaciju o bolesti, već i poruku o tome koliko je viđen, shvaćen i podržan. Nerijetko je u sve uključena i pacijentova obitelj kojoj su, također, potrebni empatija i dosljednost. Način na koji liječnik vodi razgovor, reagira na emocije i ostavlja prostor za nadu može značajno utjecati na pacijentovu prilagodbu, suradljivost i daljnje liječenje.

Zaključak: Komunikacija u ambulanti LOM je dvosmjerna, ali odgovornost za njezinu kvalitetu prvenstveno je na liječniku. Dobrim odnosom između liječnika i pacijenta ostvaruje se povjerenje koje postaje ljekovito. Način na koji je vijest izrečena može ublažiti patnju, očuvati povjerenje i omogućiti pacijentu da ostane aktivan sudionik u daljnjem liječenju.

LITERATURA:

1. Ranjan P, Kumari A, Chakrawarty A. How can Doctors Improve their Communication Skills? J Clin Diagn Res. 2015 Mar;9(3):JE01-4.
2. Baile WF, Buckman R, Lenzi R, Glober G, Beale EA, Kudelka AP. SPIKES-A six-step protocol for delivering bad news: application to the patient with cancer. Oncologist. 2000;5(4):302-11.
3. Havelka M. Zdravstvena psihologija. Jastrebarsko: Naklada Slap.2001.

Extended Abstract
Young researchers / scientists

Communication – the beginning of every treatment

Sara Maroević[1], Sanja Maroević[2], Marija Orel[2]

1. Health care center Zagreb – West
2. University Psychiatric Hospital Vrapče

Keywords: communication, empathy, family medicine doctor
Correspondence address: Sara Maroević, dr.med., Vrtlarska ulica 1a, 10000 Zagreb
E-mail: sara.maroevic@gmail.com
ORCID: Sara Maroević: 0009-0001-9032-306X
Sanja Maroević: 0009-0004-6621-472X
Marija Orel: 0009-0003-6544-1827

Introduction with aim: Communication is the foundation of every relationship between the family medicine doctor (FMD) and the patient; it precedes every procedure and outcome. Through effective communication, a relationship of trust, safety, and understanding is established, without which treatment is not possible. The aim of this paper is to highlight the importance of communication in the family medicine practice, which can facilitate everyday work.

Discussion: Communication is the transfer of messages from the sender to the receiver, in this case from the FMD to the patient. Types of communication are divided into verbal (use of language), nonverbal (gestures, body language), and paraverbal (intonation and pitch of voice, volume, speech fluency, silence). By acknowledging the needs of both parties, a high-quality therapeutic relationship is created. What is important for the doctor includes: clear and accurate information, patient cooperation and honesty, structured communication, trust, and realistic expectations. What is important for the patient includes: active listening and understanding, empathy and respect, clear and comprehensible information, involvement in decision-making, consistency, and accessibility. In reality, many of these elements are not fully met, and communication barriers are often present. Being ill means being different from who one was before. Illness changes a person's functioning, especially in the case of malignant diseases. One of the most difficult aspects of a doctor's work is delivering a serious diagnosis to a patient. The conversation should begin with proper preparation of the setting (ensuring privacy, avoiding interruptions, maintaining eye contact). The doctor should ask the patient questions in order to assess the patient's insight into their condition and their knowledge of the disease. During the conversation, it is important to ask the patient how much information they wish to receive about their condition. When delivering bad news, it is recommended to use simple language, provide information in small portions, and periodically assess the patient's response. It is very important to acknowledge the patient's emotions and provide support through empathic responses. The final part of the conversation focuses on treatment planning and the doctor's availability for further questions. Delivering bad news is not a one-time task; it is a process that continues over multiple encounters, especially in family medicine practice, where the doctor–patient relationship lasts for years. In such situations, the patient does not receive only information about the illness, but also a message about how much they are seen, understood, and supported. The patient's family is often involved as well and likewise requires empathy and consistency. The way in which the doctor conducts the conversation, responds to emotions, and leaves space for hope can significantly influence the patient's adjustment, cooperation, and further treatment.

Conclusion: Communication in the family medicine practice is bidirectional, but responsibility for its quality lies primarily with the doctor. A good doctor–patient relationship builds trust, which itself becomes therapeutic. The way in which information is delivered can alleviate suffering, preserve trust, and enable the patient to remain an active participant in further treatment.

REFERENCES:

1. Ranjan P, Kumari A, Chakrawarty A. How can Doctors Improve their Communication Skills? J Clin Diagn Res. 2015 Mar;9(3):JE01-4.
2. Baile WF, Buckman R, Lenzi R, Glober G, Beale EA, Kudelka AP. SPIKES-A six-step protocol for delivering bad news: application to the patient with cancer. Oncologist. 2000;5(4):302-11.
3. Havelka M. Zdravstvena psihologija. Jastrebarsko: Naklada Slap.2001.

Jesu li infekcije mokraćnog sustava češće u bolesnika liječenih SGLT-2 inhibitorima? – Rezultati pilot istraživanja

Daniela Strinić[1], Juraj Jug[1]

1. Dom zdravlja Zagreb - Zapad, Zagreb

Ključne riječi: antibiotici, infekcije mokraćnog sustava, SGLT2 inhibitori, šećerna bolest
Adresa za dopisivanje: Juraj Jug, Krapinska 45, Zagreb
E adresa: juraj2304@gmail.com
ORCID: Daniela Strinić: 0000-0001-5988-5091
Juraj Jug: 0000-0002-3189-1518

Uvod s ciljem: Unatoč sve većem broju dokaza različitih istraživanja da inhibitori natrij-glukoza kontransportera 2 (SGLT2i) ne povećavaju rizik nastanka infekcija mokraćnog sustava (UTI), njihova primjena se trajno ili privremeno prekida u slučaju UTI-a, što može pogoršati ishod osnovne bolesti. Cilj istraživanja je provjeriti godišnju incidenciju i liječenje UTI-a u ordinacijama obiteljske medicine (OOM) te utvrditi jesu li one bile češće u bolesnika liječenih SGLT2i.

Materijali i metode: U presječno pilot-istraživanje uključeni su sve punoljetne osigurane osobe (OO) dvije OOM oboljele od jedne ili više UTI (1.11.2024.-31.10.2025.) i/ili liječeni SGLT2i (empagliflozin, dapagliflozin). Zabilježen je i podatak o trajanju terapije SGLT2i, učinjenoj mikrobiološkoj analizi urina te rezultatu, liječenju, komorbiditetima, korištenju urinarnog katetera te bubrežnoj funkciji i vrijednosti HbA1c. Podatci su prikazani kao medijan [interkvartilni raspon] te postotni udjeli (%), a za analizu su korišteni X2 test i Spearmanova rank korelacija u programu Statistica v.12.0.

Rezultati: Od 3407 OO u skrbi uključenih OOM, UTI je pronađen u njih 268 (7,9%), a 202 su bile žene (75,4%). Medijan dobi oboljelih od UTI bio je 69 [54–76] godina. Sveukupno je 66 OO bilo liječeno s SGLT2i (40 empagliflozinom i 26 dapagliflozinom), a 13 je razvilo UTI u ispitivanom periodu (19,7%). Oboljelih od šećerne bolesti tipa 2 (ŠB2) bilo je 348 (10,2%). Nije pronađena razlika u učestalosti između pojavnosti UTI u oboljelih od ŠB2 ovisno o liječenju SGLT2i (44 bez lijeka [16,4%] vs. 11 sa SGLT2i, X2=1,662, p=0,197). Sveukupno, UTI su bile češće u OO bez SGLT2i u terapiji (257 bez vs. 13 liječenih s SGLT2i; X2=12,78, p<0,001). Najčešći komorbititeti u oboljelih od UTI bili su kronična bubrežna bolest (24,2%), benigna hiperplazija prostate (21,3%) te nefrolitijaza (11,6%). Mikrobiološka analiza urina učinjena je u 87 oboljelih (32,5%) pri čemu su najčešće izolirane bakterije E. coli (38/87), K. pneumoniae (8/87) i P. mirabilis (7/87). UTI su najčešće liječene nitrofurantoinom (35,8%), fosfomicinom (13,1%), ciprofloksacinom (12,3%), cefiksimom (10,4%) te koamoksiklavom (7,46%).

Zaključak: Godišnja incidencija UTI-a u ispitivanim OOM bila je 7,9%, u polovice bolesnika bile su uzrokovane s E.coli te u trećine liječene nitrofurantoinom. U bolesnika liječenih s SGLT-2i nije primijećena veća incidencija UTI, neovisno o postojanju ŠB2.

LITERATURA:

1. Iordan L, Avram VF, Timar B, Sturza A, Popescu S, Albai O, Timar RZ. Safety of SGLT2 Inhibitors and Urinary Tract Infections in Clinical Practice-A Cross-Sectional Study. Medicina (Kaunas). 2024 Dec 1;60(12):1974. doi: 10.3390/medicina60121974.
2. Kittipibul V, Cox ZL, Chesdachai S, Fiuzat M, Lindenfeld JA, Mentz RJ. Genitourinary Tract Infections in Patients Taking SGLT2 Inhibitors: JACC Review Topic of the Week. Journal of the American College of Cardiology.2024;83(16):1568-78. https://doi.org/10.1016/j.jacc.2024.01.040
3. Wu MZ, Guo R, Chandramouli C, Liu L, Ma-On Tung A, Tze-Wei Tsang C, et al. Urinary tract infection and continuation of sodium-glucose cotransporter-2 inhibitors in diabetic patients. European Heart Journal. 2025:ehaf788. https://doi.org/10.1093/eurheartj/ehaf788
4. Ljungberg C, Kristensen FPB, Dalager-Pedersen M, Vandenbroucke-Grauls C, Sørensen HT, Nørgaard M, Thomsen RW. Risk of Urogenital Infections in People With Type 2 Diabetes Initiating SGLT2is Versus GLP-1RAs in Routine Clinical Care: A Danish Cohort Study. Diabetes Care. 2025 Jun 1;48(6):945-954. doi: 10.2337/dc24-2169

Extended Abstract
Young researchers / scientists

Are urinary tract infections more common in patients treated with SGLT-2 inhibitors? - Pilot-study results

Daniela Strinić[1], Juraj Jug[1]

1. Health center Zagreb - West

Keywords: antibiotics, diabetes mellitus type 2, SGLT2 inhibitors, urinary tract infections
Correspondence address: Juraj Jug, Krapinska 45, Zagreb
E-mail: juraj2304@gmail.com
ORCID: Daniela Strinić: 0000-0001-5988-5091
Juraj Jug: 0000-0002-3189-1518

Introduction with aim: Despite the increasing evidence from various studies that sodium-glucose co-transporter 2 inhibitors (SGLT2i) do not increase the risk of urinary tract infections (UTIs), their use is permanently or temporarily discontinued in the event of UTIs, which can worsen the outcome of the underlying disease. The study aims to verify the annual incidence and treatment of UTIs in family medicine practices (FMP) and to determine whether they were more common in patients treated with SGLT2i.

Materials and methods: All adult insured persons (IPs) of two FMPs who experienced one or more UTIs (1.11.2024-31.10.2025) and/or were treated with SGLT2 Inhibitors (empagliflozin, dapagliflozin) were included in the cross-sectional pilot study. Data on the duration of SGLT2i therapy, microbiological urine analysis performed and the result, treatment, comorbidities, use of urinary catheters, renal function, and HbA1c values were also recorded. Data are presented as median [interquartile range] and percentages (%), and the X2 test and Spearman rank correlation were used in Statistica v.12.0 for analysis.

Results: Of the 3407 IPs in the care of the FMP included, 268 had UTI (7.9%), and 202 were women (75.4%). Their median age was 69 [54–76] years. A total of 66 IPs were treated with SGLT2i (40 empagliflozin and 26 dapagliflozin), and 13 developed UTI during the study period (19.7%). There were 348 (10.2%) patients with type 2 diabetes (DM2). No difference in the incidence of UTIs was found in patients with DM2 depending on SGLT2i treatment (44 without drug [16.4%] vs. 11 with SGLT2i, X2=1.662, p=0.197). Overall, UTIs were more common in patients without SGLT2i therapy (257 without vs. 13 treated with SGLT2i; X2=12.78, p<0.001). The most common comorbidities in patients with UTIs were chronic kidney disease (24.2%), benign prostatic hyperplasia (21.3%), and nephrolithiasis (11.6%). Microbiological analysis of urine was performed in 87 patients (32.5%), with the most isolated bacteria being E. coli (38/87), K. pneumoniae (8/87), and P. mirabilis (7/87). UTIs were most treated with nitrofurantoin (35.8%), fosfomycin (13.1%), ciprofloxacin (12.3%), cefixime (10.4%), and co-amoxiclav (7.46%).

Conclusion: The annual incidence of UTIs in the studied FMPs was 7.9%; in half of the patients, they were caused by E. coli, and in a third, they were treated with nitrofurantoin. No higher incidence of UTIs was observed in patients treated with SGLT-2i, regardless of the presence of DM2.

REFERENCES:

1. Iordan L, Avram VF, Timar B, Sturza A, Popescu S, Albai O, Timar RZ. Safety of SGLT2 Inhibitors and Urinary Tract Infections in Clinical Practice-A Cross-Sectional Study. Medicina (Kaunas). 2024 Dec 1;60(12):1974. doi: 10.3390/medicina60121974.
2. Kittipibul V, Cox ZL, Chesdachai S, Fiuzat M, Lindenfeld JA, Mentz RJ. Genitourinary Tract Infections in Patients Taking SGLT2 Inhibitors: JACC Review Topic of the Week. Journal of the American College of Cardiology.2024;83(16):1568-78. https://doi.org/10.1016/j.jacc.2024.01.040
3. Wu MZ, Guo R, Chandramouli C, Liu L, Ma-On Tung A, Tze-Wei Tsang C, et al. Urinary tract infection and continuation of sodium-glucose cotransporter-2 inhibitors in diabetic patients. European Heart Journal. 2025:ehaf788. https://doi.org/10.1093/eurheartj/ehaf788
4. Ljungberg C, Kristensen FPB, Dalager-Pedersen M, Vandenbroucke-Grauls C, Sørensen HT, Nørgaard M, Thomsen RW. Risk of Urogenital Infections in People With Type 2 Diabetes Initiating SGLT2is Versus GLP-1RAs in Routine Clinical Care: A Danish Cohort Study. Diabetes Care. 2025 Jun 1;48(6):945-954. doi: 10.2337/dc24-2169

Prekomjerna upotreba benzodiazepina i Z-lijekova u obiteljskoj medicini u Hrvatskoj – preliminarni rezultati

Vanja Pintarić Japec[1], Jelena Šakić Radetić[2], Anja Gačina Jazvić[3], Ema Dejhalla[4], Adriana Babić[5], Tina Zavidić[6], Rea Deghenghi[1], Juraj Jug[6]

1. Dom zdravlja Zagreb – Centar
2. Dom zdravlja Osječko-baranjske županije
3. Dom zdravlja Zagrebačke županije
4. Zdravstvena ustanova za medicinu rada Rijeka, Ordinacija obiteljske medicine
5. Dom zdravlja Zagreb – Istok
6. Istarski domovi zdravlja
7. Dom zdravlja Zagreb – Zapad

Ključne riječi: benzodiazepini, z-lijekovi, prekomjerno propisivanje, obiteljska medicina
Adresa za dopisivanje: Vanja Pintarić Japec, Martićeva ulica 63, 10 000 Zagreb
E adresa: vanja.pintaric@hotmail.com
ORCID: Vanja Pintarić Japec: 0000-0002-6765-299X
Jelena Šakić Radetić: 0000-0002-9935-4962
Anja Gačina Jazvić: 0000-0002-7959-2090
Ema Dejhalla: 0000-0003-0873-1257
Adriana Babić: 0009-0003-9529-6376
Tina Zavidić: 0000-0002-5365-0002
Rea Deghenghi: 0000-0002-4059-0602
Juraj Jug: 0000-0002-3189-1518

Uvod s ciljem: Iako se u praksi liječnika obiteljske medicine (LOM) benzodiazepini i Z-lijekovi propisuju za širok dijapazon dijagnoza, stručne preporuke neovisno o indikaciji ne opravdavaju njihovu dugoročnu upotrebu. Unatoč tome, primjetna je česta prekomjerna upotreba ovih lijekova te porast njihovog propisivanja u mnogim zemljama, uključujući Hrvatsku, koja se ubraja među vodeće u Europskoj uniji.

Cilj ovog istraživanja bio je procijeniti propisuju li LOM benzodiazepine i Z-lijekove dugoročno, i za koje kliničke indikacije.

Ispitanici i metode: Provedena je presječna studija u četiri ordinacije obiteljske medicine (OM) diljem Hrvatske (koje su brinule o 6899 osiguranih pacijenata). Uključeni su pacijenti kojima je u posljednjih pet godina (1.1.2019. – 31.12.2024.) propisan jedan ili više benzodiazepina i Z lijekova. Zabilježeno je kada je lijek propisan, za koju indikaciju i tko je prvi predložio lijek (LOM ili drugi specijalist), zatim trajanje terapije, eventualne izmjene i je li pacijent uzimao antidepresive.

Rezultati: Ukupno 1139 pacijenata (prosječno 59,6 ± 15,9 godina) primilo je barem jedan benzodiazepin ili Z lijek (15,5 – 23,1% pacijenata u svakom timu OM, 67,5% žena). Dva ili više propisanih lijekova pronađena su kod 149 pacijenata (13,1%). Diazepam je bio najčešće propisivan kod 538 pacijenata (42,2%), zatim alprazolam kod 369 (28,9%), zolpidem kod 130 (10,2%) i oksazepam kod 119 pacijenata (9,3%). Dugotrajna primjena (> 3 mjeseca) utvrđena je kod 509 pacijenata (39,5%), ali samo je njih 154 imalo propisan antidepresiv (30,2%). Kontinuirana upotreba dulje od 12 mjeseci zabilježena je kod 357 pacijenata (27,7%). Benzodiazepin ili Z lijek indiciran je od strane LOM-a kod 832 pacijenta (64,5%), a kod 305 lijek je indicirao psihijatar (23,7%). Glavne indikacije bile su anksiozni poremećaji kod 398 (30,9%), nesanica kod 193 (15,0%) i bol u leđima kod 158 pacijenata (12,3%). Ovo su preliminarni rezultati studije koja je u tijeku.

Zaključak: Prema preliminarnim rezultatima ove studije, LOM učestalo dugoročno propisuju benzodiazepine i Z-lijekove u praksi, s čestom kontinuiranom upotrebom, a najčešća indikacija su anksiozni poremećaji. Rezultati ove studije mogu koristiti u razumijevanju obrazaca propisivanja ovih lijekova izvan okvira stručnih smjernica, s ciljem intervencija usmjerenih prema liječenju psihičkih bolesti u skladu s medicinom temeljenom na dokazima.

LITERATURA:

1. Šižgorić L. Trendovi u propisivanju benzodiazepina u Republici Hrvatskoj [Diplomski rad]. Zagreb: Sveučilište u Zagrebu, Medicinski fakultet; 2023 [pristupljeno 29.01.2026.] Dostupno na: https://urn.nsk.hr/urn:nbn:hr:105:092955
2. Bužančić I, Pejaković TI, Hadžiabdić MO. A Need for Benzodiazepine Deprescribing in the COVID-19 Pandemic: A Cohort Study. Pharmacy (Basel). 2022 Sep 23;10(5):120. doi: 10.3390/pharmacy10050120. PMID: 36287441; PMCID: PMC9611451.
3. Hazard A, Fournier L, Rossignol L, Pelletier Fleury N, Hervé C, Pitel T, Pino C, Saint-Lary O, Hanslik T, Blanchon T, François M. A top 5 list for French general practice. BMC Fam Pract. 2020 Aug 9;21(1):161. doi: 10.1186/s12875-020-01235-5. PMID: 32772925; PMCID: PMC7416409.
4. Davies J, Rae TC, Montagu L. Long-term benzodiazepine and Z-drugs use in England: a survey of general practice [corrected]. Br J Gen Pract. 2017 Sep;67(662):e609-e613. doi: 10.3399/bjgp17X691865. Epub 2017 Jul 17. Erratum in: Br J Gen Pract. 2018 Sep;68(674):416. doi: 10.3399/bjgp18X698837. PMID: 28716996; PMCID: PMC5569740.

Overuse of Benzodiazepines and Z-Drugs in Croatian Family Medicine – Preliminary Results

Vanja Pintarić Japec[1], Jelena Šakić Radetić[2], Anja Gačina Jazvić[3], Ema Dejhalla[4], Adriana Babić[5], Tina Zavidić[6], Rea Deghenghi[7], Juraj Jug[8]

1. Health Center Zagreb – Center
2. Health Center Osijek-Baranja County
3. Health Center Zagreb County
4. Health Institution for Occupational Medicine Rijeka, Family Medicine Practice
5. Health Center Zagreb – East
6. Istrian Health Centers
7. Zagreb Health Center – West

Keywords: benzodiazepines, Z drugs, overprescribing, family medicine
Correspondence address: Vanja Pintarić Japec, Martićeva ulica 63, 10 000 Zagreb
E-mail: vanja.pintaric@hotmail.com
ORCID: Vanja Pintarić Japec: 0000-0002-6765-299X
Jelena Šakić Radetić: 0000-0002-9935-4962
Anja Gačina Jazvić: 0000-0002-7959-2090
Ema Dejhalla: 0000-0003-0873-1257
Adriana Babić: 0009-0003-9529-6376
Tina Zavidić: 0000-0002-5365-0002
Rea Deghenghi: 0000-0002-4059-0602
Juraj Jug: 0000-0002-3189-1518

Introduction with aim: Although benzodiazepines and Z-drugs are prescribed by family physicians (FPs) for a wide range of diagnoses, expert recommendations, regardless of indication, do not justify their long-term use. Despite this, frequent overuse of these drugs and an increase in their prescription are noticeable in many countries, including Croatia, which is among the leading countries in this regard in the European Union.

The aim of this study was to assess whether FPs prescribe benzodiazepines and Z-drugs long-term, and for which clinical indications.

Subjects and methods: A cross-sectional study was conducted in four family medicine practices (FMPs) across Croatia (caring for 6899 insured patients). Patients who were prescribed one or more benzodiazepines and Z drugs in the last five years (1.1.2019. – 31.12.2024.) were included. We recorded data on when the drug was prescribed, for which indication and who first suggested the drug (FP or another specialist), the duration of therapy, any changes made, and whether the patient was taking antidepressants.

Results: A total of 1139 patients (mean age 59.6 ± 15.9 years) received at least one benzodiazepine or Z drug (15.5–23.1% of patients in each FMP, 67.5% women). Two or more prescribed drugs were found in 149 patients (13.1%). Diazepam was the most commonly prescribed in 538 patients (42.2%), followed by alprazolam in 369 (28.9%), zolpidem in 130 (10.2%), and oxazepam in 119 patients (9.3%). Long-term use (> 3 months) was identified in 509 patients (39.5%), but only 154 of them were prescribed an antidepressant (30.2%). Continuous use for more than 12 months was recorded in 357 patients (27.7%). Benzodiazepine or Z drug was indicated by FPs in 832 patients (64.5%), while in 305 the drug was indicated by a psychiatrist (23.7%). The main indications were anxiety disorders in 398 (30.9%), insomnia in 193 (15.0%) and back pain in 158 patients (12.3%). These are preliminary results of an ongoing study.

Conclusion: According to the preliminary results of this study, FPs frequently prescribe benzodiazepines and Z-drugs long-term in clinical practice, with frequent continued use, and the most common indication being anxiety disorders. The results of this study can be used to understand the prescribing patterns of these drugs outside the framework of professional guidelines, with the aim of implementing interventions aimed at treating mental illnesses in accordance with evidence-based medicine.

REFERENCES:

1. Šižgorić L. Trendovi u propisivanju benzodiazepina u Republici Hrvatskoj [Diplomski rad]. Zagreb: Sveučilište u Zagrebu, Medicinski fakultet; 2023 [pristupljeno 29.01.2026.] Dostupno na: https://urn.nsk.hr/urn:nbn:hr:105:092955
2. Bužančić I, Pejaković TI, Hadžiabdić MO. A Need for Benzodiazepine Deprescribing in the COVID-19 Pandemic: A Cohort Study. Pharmacy (Basel). 2022 Sep 23;10(5):120. doi: 10.3390/pharmacy10050120. PMID: 36287441; PMCID: PMC9611451.
3. Hazard A, Fournier L, Rossignol L, Pelletier Fleury N, Hervé C, Pitel T, Pino C, Saint-Lary O, Hanslik T, Blanchon T, François M. A top 5 list for French general practice. BMC Fam Pract. 2020 Aug 9;21(1):161. doi: 10.1186/s12875-020-01235-5. PMID: 32772925; PMCID: PMC7416409.
4. Davies J, Rae TC, Montagu L. Long-term benzodiazepine and Z-drugs use in England: a survey of general practice [corrected]. Br J Gen Pract. 2017 Sep;67(662):e609-e613. doi: 10.3399/bjgp17X691865. Epub 2017 Jul 17. Erratum in: Br J Gen Pract. 2018 Sep;68(674):416. doi: 10.3399/bjgp18X698837. PMID: 28716996; PMCID: PMC5569740.

Parenteralna nadoknada tekućine u skrbi na kraju života – olakšavanje tegoba ili produžavanje muka?

Ema Slapničar[1,2], Nina Janjić Zovko[1], Marion Tomičić[1,2]

1. Dom zdravlja Splitsko – dalmatinske županije
2. Medicinski fakultet u Splitu

Ključne riječi: palijativna skrb, nadoknada tekućine, hipodermokliza, dehidracija, medicinska etika
Adresa za dopisivanje: Kavanjinova 2, 21 000 Split
E adresa: ema.slapnicar@dz-sdz.hr
ORCID: Ema Slapničar: 0009-0001-8315-160X
Nina Janjić Zovko: 0009-0001-2385-1903
Marion Tomičić: 0000-0003-2148-3227

Uvod s ciljem: Mnogi pacijenti u zadnjim danima života zbog prestanka oralnog unosa tekućine nadoknadu tekućine primaju intravenskim infuzijama. Iako pacijenti i članovi obitelji često inzistiraju na ovoj intervenciji, percipirajući je kao osnovnu skrb, ne postoje dokazi koji bi poduprli jasnu korist parenteralne nadoknade tekućine u ovoj populaciji. Nakon započinjanja parenteralne hidracije, potreban je jasan i dosljedan dijalog između pacijenta, obitelji i pružatelja palijativne skrbi kako bi zajednički odredili u kojem je trenutku etički ispravno prestati s primjenom intravenskih infuzija. Cilj ovog rada je dati praktične smjernice liječnicima koji odlučuju o primjeni navedenih metoda temeljene na etičkim načelima i kliničkim dokazima.

Rasprava: Većina pacijenata na kraju života unosi manje tekućine i hrane zbog brojnih uzroka poput mučnine i povraćanja, disfagije, opstrukcije crijeva, psihičkih smetnji ili opće slabosti i inapetencije. Posljedična dehidracija može uzrokovati delirij ili pogoršati oštećenje bubrega, elektrolitni disbalans i nuspojave opioida. S druge strane, parenteralna hidracija predstavlja opterećenje za pacijenta i može produžiti proces umiranja. Nedostaci parenteralne hidracije uključuju pojačanu bronhalnu sekreciju koja rezultira kašljem i dispnejom, pogoršanje ascitesa i pleuralnog izljeva. Parenteralna hidracija ne smanjuje osjećaj žeđi i suhoće usta, koji se treba zbrinjavati oralnom higijenom. Smatra se da elektrolitni disbalans i prisutnost ketona djeluju kao prirodni anestetici, uzrokuju pospanost i smanjuju patnje.

Provedba kliničkih ispitivanja u svrhu procjene koristi parenteralne hidracije u skrbi na kraju života otežana je zbog metodoloških i etičkih razloga te postoji tek nekoliko prospektivnih ili randomiziranih kontroliranih ispitivanja. U jednoj kliničkoj studiji pacijenti koji su primali parenteralnu nadoknadu tekućine imali su nižu incidenciju sedacije i mioklonusa od pacijenata koji nisu liječeni infuzijama (1). Druga studija pokazala je da ne postoje razlike u incidenciji halucinacija, mioklonusa, umora, sedacije, kvalitete života i preživljenja između skupina (2). Uz to, intravenska nadoknade tekućine indicirana je ako se očekuje dulje preživljenje pacijenta s akutno nastalom dehidracijom (infekcija, povraćanje, proljev), u slučaju hiperkalcemije te opioidima inducirane neurotoksičnosti (mioklonus, delirij, hiperalgezija).

Unatoč nedostatku dokaza iz randomiziranih studija, kvalitativna su istraživanja pokazala da pacijenti s uznapredovalim stadijem karcinoma i njihove obitelji percipiraju parenteralnu hidraciju kao metodu koja povećava dostojanstvo pacijenta i kvalitetu života (3).

U nedostatku univerzalnih smjernica, nužan je individualizirani pristup svakom pacijentu uz analizu koristi i rizika, poštujući pritom autonomiju pacijenta i preferencije obitelji, uz primarni cilj očuvanja dostojanstva i kvalitete života. Ako se liječnik u dogovoru s pacijentom i obitelji odluči za parenteralnu hidraciju, supkutana primjena infuzijskih otopina (hipodermokliza) bolja je alternativa od intravenske primjene. Hipodermoklizu pacijenti dobro podnose, jednostavna je za primjenu i može se davati u kućnim uvjetima. Supkutani put primjene poboljšava udobnost i kvalitetu života pacijenta i obitelji, osigurava dostojanstvo pacijentu i smanjuje troškove primjene parenteralne hidracije (4).

Zaključak: Ne postoje jasni dokazi koji podupiru primjenu parenteralne hidracije, posebno intravenskim putem, kod pacijenata na kraju života kod kojih je očekivano preživljenje nekoliko dana ili tjedana. Uslijed nedostatka istraživanja i velikih razlika u percepciji korisnosti intravenskih infuzija među pacijentima, njihovim obiteljima i liječnicima, pitanje parenteralne nadoknade tekućine i dalje predstavlja kliničku i etičku dilemu liječnicima koji pružaju palijativnu skrb.

LITERATURA:

1. Bruera E, Sala R, Rico MA. Effects of parenteral hydration in terminally ill cancer patients: a preliminary study. J Clin Oncol 2005; 23:2366–71.
2. Bruera E, Hui D, Dalal S, Torres-Vigil I, Trumble J, Roosth J. Parenteral hydration in patients with advanced cancer: a multicenter, double-blind, placebo-controlled randomized trial. J Clin Oncol. 2013;31:111-8.
3. Cohen MZ, Torres-Vigil I, Burbach BE, de la Rosa A, Bruera E. The meaning of parenteral hydration to family caregivers and patients with advanced cancer receiving hospice care. J Pain Symptom Manage. 2012;43:855-65.
4. Martin CM. Hypodermoclysis: renewed interest in an old technique. Consult Pharm. 2010;25:204-6, 209-12.

Parenteral hydration at the end of life – comfort measure or burdensome intervention?

Ema Slapničar[1,2], Nina Janjić Zovko[1], Marion Tomičić[1,2]

1. Health center of Split-Dalmatia county
2. Faculty of Medicine, University of Split

Keywords: palliative care, fluid therapy, hypodermoclysis, dehydration, medical ethics
Correspondence address: Kavanjinova 2, 21 000 Split
E-mail: ema.slapnicar@dz-sdz.hr
ORCID: Ema Slapničar: 0009-0001-8315-160X
Nina Janjić Zovko: 0009-0001-2385-1903
Marion Tomičić: 0000-0003-2148-3227

Introduction with aim: In the final days of life, many patients receive intravenous fluids due to the cessation of oral intake. Although patients and their families often request this intervention, there is a lack of evidence to support a clear clinical benefit of parenteral hydration in this population. Once parenteral hydration is initiated, a clear and consistent dialogue between the patient, family, and palliative care providers is essential to ethically determine the point at which intravenous infusions should be discontinued. This paper aims to provide evidence-based guidelines for clinicians, grounded in ethical principles, to assist in the decision-making process regarding the use of these interventions.

Discussion: Most patients at the end of life experience a decline in fluid and food intake due to various factors, including nausea, vomiting, dysphagia, intestinal obstruction, psychological distress, or generalized weakness and inappetence. The resulting dehydration can trigger delirium or exacerbate renal impairment, electrolyte imbalances, and opioid-related side effects. Conversely, parenteral hydration may place a burden on the patient and potentially prolong the dying process. Its disadvantages include increased bronchial secretions leading to cough and dyspnea, as well as the worsening of ascites and pleural effusions. Furthermore, parenteral hydration does not alleviate the sensation of thirst or dry mouth, which should be managed through oral hygiene. Electrolyte disturbances and ketonemia are thought to provide a degree of natural analgesia, promoting somnolence and potentially reducing the perception of suffering during the dying process.

Conducting clinical trials to assess the benefits of parenteral hydration in end-of-life care is challenging due to methodological and ethical constraints; consequently, only a few prospective or randomized controlled trials exist. One clinical study found that patients receiving parenteral fluids had a lower incidence of sedation and myoclonus (1). However, another study demonstrated no significant differences regarding hallucinations, myoclonus, fatigue, sedation, quality of life or overall survival (2). Despite the lack of evidence from RCTs, qualitative research indicates that patients with advanced cancer and their families perceive parenteral hydration as a measure that enhances patient dignity and quality of life (3).

In the absence of universal guidelines, an individualized approach is essential. This involves a careful risk-benefit analysis while respecting patient autonomy and family preferences, with the primary goal of preserving dignity and quality of life. If a clinician opts for parenteral hydration, subcutaneous infusion (hypodermoclysis) is a superior alternative to the intravenous route. Hypodermoclysis is well-tolerated, easy to administer, and suitable for home care settings. It improves comfort and quality of life for both the patient and the family, ensures patient dignity, and reduces the costs associated with parenteral hydration (4).

Conclusion: There is no clear evidence to support the use of parenteral hydration, particularly via the intravenous route, in end-of-life care. Due to the lack of research and significant disparities in the perception of the clinical utility of intravenous infusions among patients, their families, and clinicians, the issue of parenteral fluid replacement remains a complex clinical and ethical dilemma for palliative care providers.

REFERENCES:

1. Bruera E, Sala R, Rico MA. Effects of parenteral hydration in terminally ill cancer patients: a preliminary study. J Clin Oncol 2005; 23:2366–71.
2. Bruera E, Hui D, Dalal S, Torres-Vigil I, Trumble J, Roosth J. Parenteral hydration in patients with advanced cancer: a multicenter, double-blind, placebo-controlled randomized trial. J Clin Oncol. 2013;31:111-8.
3. Cohen MZ, Torres-Vigil I, Burbach BE, de la Rosa A, Bruera E. The meaning of parenteral hydration to family caregivers and patients with advanced cancer receiving hospice care. J Pain Symptom Manage. 2012;43:855-65.
4. Martin CM. Hypodermoclysis: renewed interest in an old technique. Consult Pharm. 2010;25:204-6, 209-12.

Extended Abstract
Mladi istraživači / znanstvenici

Kad odgovornost postaje teret: istraživanje anksioznosti kod mladih liječnika

Renata Rossi[1], Ines Diminić - Lisica[2,3], Tina Zavidić[1,3]

1. Istarski domovi zdravlja, Poreč
2. Zdravstvena ustanova dr. Ines Diminić - Lisica
3. Medicinski fakultet Sveučilišta u Rijeci, Katedra za obiteljsku medicinu

Ključne riječi: anksioznost, mentalno zdravlje, mladi liječnici, rizični čimbenici, Istarska županija
Adresa za dopisivanje: Renata Rossi, Mauro Gioseffi 2, 52440 Poreč
E adresa: renata.rossi096@gmail.com
ORCID: Renata Rossi: 0009-0009-3580-2285
Ines Diminić-Lisica: 0000-0003-1981-1957
Tina Zavidić: 0000-0002-5365-0002

Uvod s ciljem Jedan od najznačajnijih izazova suvremenog društva je mentalno zdravlje populacije, pri čemu su mladi osobito ranjiva skupina. Iako se depresivni poremećaji već godinama nalaze u fokusu stručne i šire javnosti, anksiozni poremećaji često ostaju u sjeni. Posebno rizičnu skupinu za razvoj anksioznih poremećaja čine mladi liječnici, suočeni s visokom razinom odgovornosti, emocionalnim opterećenjem i zahtjevnom prirodom svoga posla.

Cilj ovog istraživanja bio je ispitati pojavnost anksioznosti među mladim liječnicima koji rade u Istarskoj županiji te identificirati rizične čimbenike koji pridonose njezinu razvoju.

Metodologija U srpnju 2025. godine provedeno je presječno istraživanje putem anonimnog upitnika. Istraživanje je obuhvatilo mlade liječnike Istarske županije koji su radno aktivni i mlađi od 40 godina. Ukupno je sudjelovalo 64 ispitanika, što čini 59,81% populacije koja je zadovoljavala uključne kriterije. Korišteni upitnik sastojao se od četiri odjeljka, s ukupno 55 pitanja. Dio upitnika preuzet je iz validiranih instrumenata GAD-7 (engl. Generalized Anxiety Disorder-7) i ISI (engl. Insomnia Severity Index).

Rezultati Gotovo dvije trećine ispitanika (68,8%) bile su žene. Prosječna životna dob ispitanika iznosila je 29 ± 4 godina, uz prosječni radni staž od 4 ± 3 godine. Većina ispitanika činili su specijalizanti (76,6%), pri čemu je najveći udio dolazio iz Opće bolnice Pula (54,3%). Blagi stupanj anksioznosti zabilježen je kod 35,9% sudionika, srednji kod 4,7%, a teški kod 6,3% ispitanika. Utvrđena je statistički značajno viša razina anksioznosti kod žena ($p < 0,000$). Nadalje, liječnici koji se specijaliziraju za primarnu razinu zdravstvene zaštite pokazali su višu razinu anksioznosti u usporedbi s onima zaposlenima na sekundarnoj razini. Među mladim liječnicima s izraženijim anksioznim smetnjama, gotovo dvije trećine nije dijagnosticirano, a nijedan ispitanik nije bio na kroničnoj terapiji. Više od 60% sudionika navelo je osjećaj preopterećenosti, pri čemu je 40% kao glavni uzrok istaknulo posao. Dodatno, tek trećina mladih liječnika smatra se dovoljno educiranom i pripremljenom za obavljanje profesionalnih zadataka i odgovornosti.

Zaključak Rezultati istraživanja potvrđuju visoku prisutnost simptoma anksioznosti među mladim liječnicima u Istarskoj županiji. Ovi nalazi ukazuju na potrebu za daljnjim istraživanjima te sustavnim mjerama usmjerenima na očuvanje mentalnog zdravlja liječnika, osobito u ranim fazama profesionalnog razvoja, s ciljem unaprjeđenja kvalitete zdravstvene skrbi.

LITERATURA:

1. Begić D, Korajlija A, Jokić-Begić N, Psihičko zdravlje liječnika u Hrvatskoj za vrijeme pandemije COVID-19, Liječnički vjesnik 2020;142(7-8):189-198.
2. Lundgren O, Tigerstrand H, Lebena A, i sur. Impact of physical activity on the incidence of psychiatric conditions during childhood: a longitudinal Swedish birth cohort study British Journal of Sports Medicine 2025;59:1001-1009.
3. Chen C, Zheng X, Liu H, i sur. Associations between screen time and anxiety symptoms among university students: a cross-sectional study in China. BMC Public Health. 2024;24:201.
4. NCD Risk Factor Collaboration. Worldwide trends in underweight and obesity from 1990 to 2022: a pooled analysis of 3663 population-representative studies with 222 million children, adolescents, and adults. Lancet. 2024;403(10431):1027-50.
5. Mc Dowell, C.P., Carlin, A., Capranica, L. i sur. Associations of self-reported physical activity and anxiety symptoms and status among 7,874 Irish adults across harmonised datasets: a DEDIPAC-study. BMC Public Health 20, 365 (2020).

When responsibility becomes a burden: research on anxiety in young doctors

Renata Rossi[1], Ines Diminić - Lisica[2,3], Tina Zavidić[1,3]

1. Istarski domovi zdravlja, Poreč
2. Zdravstvena ustanova dr. Ines Diminić - Lisica
3. Medicinski fakultet Sveučilišta u Rijeci, Katedra za obiteljsku medicinu

Keywords: anxiety, mental health, young doctors, risk factors, Istria County
Correspondence address: Renata Rossi, Mauro Gioseffi 2, 52440 Poreč
E-mail: renata.rossi096@gmail.com
ORCID: Renata Rossi: 0009-0009-3580-2285
Ines Diminić-Lisica: 0000-0003-1981-1957
Tina Zavidić: 0000-0002-5365-0002

Introduction with aim One of the biggest challenges of modern society is the mental health of the population, with young people being a particularly vulnerable group. Although depressive disorders have been in the focus of professional and general public attention for years, anxiety disorders often remain overlooked. A particularly high-risk group for the development of anxiety disorders are young doctors, faced with a high level of responsibility, emotional burden and the demanding nature of their work.

The aim of this study was to examine the prevalence of anxiety among young doctors working in the Istrian County and to identify risk factors that contribute to its development.

Methodology In July 2025, a cross-sectional study was conducted using an anonymous questionnaire. The study was based on data collected from a sample of young physicians in the Istrian County, who are working and younger than 40 years old. 64 participants, or 59.81% of those who met the criteria, participated in the study. The questionnaire had four sections, or a total of 55 questions. Some of the questions were from the validated GAD-7 (Generalized Anxiety Disorder-7) and ISI (Insomnia Severity Index) questionnaires.

Results Almost two-thirds of the participants (68.8%) were women. The average age of the participants was 29 ± 4 years, with an average work experience of 4 ± 3 years. The majority of them were residents (76.6%), with the largest share coming from the Pula General Hospital (54.3%). Mild anxiety was recorded in 35.9% of the participants, moderate in 4.7%, and severe in 6.3% of the respondents. A statistically significantly higher level of anxiety was found in women ($p < 0.000$). Furthermore, physicians specializing in primary health care showed higher levels of anxiety compared to those employed at the secondary level. Among young physicians with more pronounced anxiety disorders, almost two-thirds were not diagnosed, and none of the respondents were on chronic therapy. More than 60% of the participants reported feeling overwhelmed, with 40% citing work as the main cause. Additionally, only a third of young doctors consider themselves sufficiently educated and prepared to perform their professional tasks and responsibilities.

Conclusion The results of the study confirm the high prevalence of anxiety symptoms among young physicians in the Istrian Region. These findings indicate the need for further research and systematic measures aimed at preserving the mental health of physicians, especially in the early stages of professional development, with the aim of improving the quality of healthcare.

REFERENCES:

1. Begić D, Korajlija A, Jokić-Begić N, Psihičko zdravlje liječnika u Hrvatskoj za vrijeme pandemije COVID-19, Liječnički vjesnik 2020;142(7-8):189-198.
2. Lundgren O, Tigerstrand H, Lebena A, i sur. Impact of physical activity on the incidence of psychiatric conditions during childhood: a longitudinal Swedish birth cohort study British Journal of Sports Medicine 2025;59:1001-1009.
3. Chen C, Zheng X, Liu H, i sur. Associations between screen time and anxiety symptoms among university students: a cross-sectional study in China. BMC Public Health. 2024;24:201.
4. NCD Risk Factor Collaboration. Worldwide trends in underweight and obesity from 1990 to 2022: a pooled analysis of 3663 population-representative studies with 222 million children, adolescents, and adults. Lancet. 2024;403(10431):1027-50.
5. Mc Dowell, C.P., Carlin, A., Capranica, L. i sur. Associations of self-reported physical activity and anxiety symptoms and status among 7,874 Irish adults across harmonised datasets: a DEDIPAC-study. BMC Public Health 20, 365 (2020).

Procjena kardiovaskularnog rizika pacijenata sa šećernom bolesti tipa 2 u ordinaciji liječnika obiteljske medicine u Hrvatskoj

Tomislav Kurevija[1,2], Anja Gačina Jazvić[3], Tamara Zibar Abramović[4], Roberta Marković Štimac[5,6], Natalija Pavić Čorak[7], Vedrana Tudor Špalj[6], Zvonimir Bosnić[8]

1. Dom zdravlja Osječko-baranjske županije
2. Katedra za obiteljsku medicinu, Medicinski fakultet Osijek, Sveučilište J.J. Strossmayera u Osijeku
3. Dom zdravlja Zagrebačke županije
4. Dom zdravlja Primorsko-goranske županije
5. Zdravstvena ustanova Srdoči, Rijeka
6. Sveučilište u Rijeci, Medicinski fakultet, Katedra za obiteljsku medicinu
7. Dom zdravlja Ličko-senjske županije
8. Ordinacija opće medicine Zvonimir Bosnić, dr. med.,

Ključne riječi: šećerna bolest tipa 2, kardiovaskularni rizik, GLP-1 agonisti, SGLT2 inhibitori, obiteljska medicina
Adresa za dopisivanje: Tomislav Kurevija, dr. med, Park kralja Petra Krešimira IV. 6, 31 000 Osijek
E adresa: tkurevija6@gmail.com
ORCID: Tomislav Kurevija: 0000-0002-6691-5786
Anja Gačina Jazvić: 0000-0002-7959-2090
Tamara Zibar Abramović: 0009-0006-3708-7535
Roberta Marković Štimac: 0000-0002-0232-0249
Natalija Pavić Čorak: 0009-0004-3731-2179
Vedrana Tudor Špalj: 0009-0008-0644-4178
Zvonimir Bosnić: 0000-0002-4101-9782

Uvod s ciljem: Liječenje šećerne bolesti tipa 2 doživjelo je velike promjene tijekom posljednjih desetljeća. Od ranijeg glukocentričnog pristupa, evoluiralo je u sveobuhvatniji, dualni princip istovremenog postizanja ciljnih razina HbA1c i procjene kardiovaskularnog (KV) rizika. Unatoč određenim varijacijama među zdravstvenim sustavima, istraživanja pokazuju da većina osoba sa šećernom bolešću ne postiže planirane ciljeve liječenja. To se posebno odnosi na lošu provedbu nove paradigme istovremene kontrole glikemije te procjene i regulacije KV rizika. S obzirom na to da današnje terapijske mogućnosti imaju revolucionarno korisne KV i bubrežne učinke, čini se da je njihova primjena još uvijek nedovoljna. Stoga je potrebno istaknuti važnost pravovremene i kvalitetne procjene KV rizika kod osoba sa šećernom bolesti sa svrhom uvođenja indiciranih farmakoterapijskih opcija.

Metode: Ovo istraživanje provedeno je u šest ordinacija obiteljske medicine iz različitih hrvatskih regija. Kako bi se adekvatno procijenio KV rizik pacijenata sa šećernom bolesti, istraživači su prvo utvrdili detaljan popis parametara procjene kardiorenalnog statusa. Proučavajući zdravstvene kartone pacijenata, istraživači su prikupili podatke o procjeni KV rizika i korištenim lijekovima.

Rezultati: Studija je obuhvatila 501 osobu sa šećernom bolesti tipa 2, s prosjekom od 8,5% od ukupnog broja pacijenata po ordinaciji. Većina pacijenata bila je u dobi od 60 do 80 godina. Po pitanju procjene KV rizika, prosječni BMI bio je 30,6 kg/m2, WHR 1,0, HbA1c 7,0% i LDL kolesterol 2,7 mmol/l. Arterijska hipertenzija bila je povezana s više od 80% slučajeva šećerne bolesti tipa 2, a koronarna bolest s oko 30%. Dok je smanjena bubrežna funkcija (eGFR < 90 ml/min) otkrivena u 75% slučajeva, 18,4% pacijenata imalo je eGFR ispod 60 ml/min, a albuminuriju 63,5%. Iako je cerebrovaskularni zabilježen u 5,6% osoba sa šećernom bolesti tipa 2, 25% imalo je značajnu stenozu karotidne ili vertebralne arterije. Što se tiče korištenja antidijabetičkih lijekova, metformin je propisan u 81,4% slučajeva, a slijede ga jednake stope propisivanja DPP4 i SGLT2 inhibitora od oko 27%. GLP-1 RA propisani su u 11,8% osoba sa šećernom bolesti tipa 2, gotovo isto kao i bazalni inzulin (11,4%). Stopa propisivanja preparata sulfonilureje bila je 9,9%, a prandijalnog inzulina 5,4%.

Zaključak: Procjena KV rizika kod osoba sa šećernom bolesti tipa 2 može doprinijeti podizanju kvalitete liječenja tih pacijenata pravovremenim uvođenjem novih kardio- i renoprotektivnih lijekova.

LITERATURA:

1. Kurevija T, Šojat D, Bosnić Z, Mujaj B, Canecki Varžić S, Majnarić Trtica L. The Reasons for the Low Uptake of New Antidiabetic Drugs with Cardiovascular Effects-A Family Doctor Perspective. J Clin Med. 2024;13(6):1617. doi:10.3390/jcm13061617.
2. Davies MJ, Aroda VR, Collins BS, et al. Management of Hyperglycemia in Type 2 Diabetes, 2022. A Consensus Report by the American Diabetes Association (ADA) and the European Association for the Study of Diabetes (EASD). Diabetes Care. 2022;45(11):2753-2786. doi:10.2337/dci22-0034.
3. Khunti, K.; Jabbour, S.; Cos, X.; Mudaliar, S.; Mende, C.; Bonaca, M.; Fioretto, P. Sodium-Glucose Co-Transporter-2 Inhibitors in Patients with Type 2 Diabetes: Barriers and Solutions for Improving Uptake in Routine Clinical Practice. Diabetes Obes. Metab. 2022, 24, 1187–1196.

Extended Abstract
Young researchers / scientists

Assessment of cardiovascular risk in individuals with type 2 diabetes in Croatian GP's practice

Tomislav Kurevija[1,2], Anja Gačina Jazvić[3], Tamara Zibar Abramović[4], Roberta Marković Štimac[5,6], Natalija Pavić Čorak[7], Vedrana Tudor Špalj[6], Zvonimir Bosnić[8]

1. Health center of Osijek-Baranja county
2. Department of Family medicine, Faculty of medicine, University of J.J. Strossmayer in Osijek
3. Health center of Zagreb county
4. Health center of Primorsko-goranska county
5. Institution for primary health care Srdoči, Rijeka
6. Department of Family medicine, Faculty of medicine, University of Rijeka
7. Healtch venter of Ličko-senjska county
8. General practice office Zvonimir Bosnić, MD

Keywords: type 2 diabetes, cardiovascular risk, GLP-1 RAs, SGLT2 inhibitors, family medicine
Correspondence address: Tomislav Kurevija, dr. med, Park kralja Petra Krešimira IV. 6, 31 000 Osijek
E-mail: tkurevija6@gmail.com
ORCID: Tomislav Kurevija: 0000-0002-6691-5786
Anja Gačina Jazvić: 0000-0002-7959-2090
Tamara Zibar Abramović: 0009-0006-3708-7535
Roberta Marković Štimac: 0000-0002-0232-0249
Natalija Pavić Čorak: 0009-0004-3731-2179
Vedrana Tudor Špalj: 0009-0008-0644-4178
Zvonimir Bosnić: 0000-0002-4101-9782

Introduction with aim: Treating type 2 diabetes (T2D) has undergone major changes over the last decade. From the earlier glucocentric approach, it evolved to a more comprehensive, dual principle of simultaneous achievement of targeted HbA1c levels and cardiovascular (CV) risk assessment. Despite certain variations among health systems, research indicates that most of individuals with T2D do not meet targeted treatment goals. This especialy consider poor implementation of novel paradigm of CV assessment and regulation. Given that nowadays therapeutic options offer revolutionary beneficial CV and renal effects, it seems that their application is still insufficient. In this regard, it is of utmost importance to raise the importance of timely and quality CV risk assessment in individuals with T2D in order to introduce indicated pharmacotherapeutic options.

Methods: This research is conducted in six GP practices from different Croatian regions. To adequately assess the CV risk of T2D patients, researchers have first established a detailed list of parameters of cardiorenal status. Examining patients' health record profiles, researchers collected data on CV risk assessment and medication used as well.

Results: 501 individuals with T2D were covered by the study, making an average of 8.5% per practice. Most of the patients were aged 60 to 80 years. Regarding the assessment of CV risk, average BMI was 30.6 kg/m2, WHR 1.0, HbA1c 7.0% and LDL cholesterol 2.7 mmol/l. Arterial hypertension was associated to over 80% of T2D cases, and coronary artery disease to around 30%. While reduced renal function (eGFR < 90 ml/min) was detected in 75% of cases, only 18.4% of patients had eGFR below 60 ml/min. Albuminuria occurred in 63.5%. Although cerebrovascular incident occurred in 5.6% of T2D individuals, 25% had significant carotid or vertebral artery stenosis. In terms of using antidiabetic medications, metformin was prescribed in 81.4% of cases, followed with equal prescribing rates of DPP4ins and SGLT2ins of around 27%. GLP-1 RAs were prescribed in 11.8% of T2D individuals, nearly the same as basal insulin (11.4%). Prescribing rate of sulfonylurea medications was 9.9%, and the prandial insulin 5.4%.

Conclusion: CV risk assessment in individuals with T2D can contribute to the raising of the quality of treatment for those patients, by timely introducing novel cardio- and reno-protective therapies.

REFERENCES:

1. Kurevija T, Šojat D, Bosnić Z, Mujaj B, Canecki Varžić S, Majnarić Trtica L. The Reasons for the Low Uptake of New Antidiabetic Drugs with Cardiovascular Effects-A Family Doctor Perspective. J Clin Med. 2024;13(6):1617. doi:10.3390/jcm13061617.
2. Davies MJ, Aroda VR, Collins BS, et al. Management of Hyperglycemia in Type 2 Diabetes, 2022. A Consensus Report by the American Diabetes Association (ADA) and the European Association for the Study of Diabetes (EASD). Diabetes Care. 2022;45(11):2753-2786. doi:10.2337/dci22-0034.
3. Khunti, K.; Jabbour, S.; Cos, X.; Mudaliar, S.; Mende, C.; Bonaca, M.; Fioretto, P. Sodium-Glucose Co-Transporter-2 Inhibitors in Patients with Type 2 Diabetes: Barriers and Solutions for Improving Uptake in Routine Clinical Practice. Diabetes Obes. Metab. 2022, 24, 1187–1196.

„Jeste li Vi student?“ - Suočavanje mladih liječnika s nepovjerenjem pacijenata u urbanim i ruralnim sredinama

Danijel Gajić[1], Emina Bajrić Čusto[2,4], Sanda Kreimayer Peštić[3,4]

1. JU Dom zdravlja Orašje
2. JZU Dom zdravlja Lukavac
3. JZNU Dom zdravlja dr “Mustafa Šehović” Tuzla
4. Univerzitet u Tuzli

Ključne riječi: predrasude, obiteljska medicina, ruralno zdravlje
Adresa za dopisivanje: Druga ulica bb, Orašje 76270
E adresa: danijel.gajic123@outlook.com
ORCID: Danijel Gajić: 0009-0003-0644-9546
Emina Bajrić Čusto: 0009-0002-4722-491X
Sanda Kreitmayer Peštić: 0000-0002-5083-3049

Uvod s ciljem: Rad u obiteljskoj medicini obuhvaća kompleksno djelovanje u različitim socio-ekonomskim sredinama. Ruralna područja predstavljaju izazov zbog deficita kadra, širokog opsega kliničke prakse i ograničene dijagnostike. Mladi liječnici se u inicijalnoj fazi rada suočavaju s otežanom tranzicijom iz teorije u praksu, što pacijenti često percipiraju kao nesigurnost. Takav skepticizam otežava izgradnju autoriteta. Cilj istraživanja bio je analizirati razlike u percepciji nepovjerenja pacijenata u urbanoj i ruralnoj sredini te identificirati oblike podrške koji bi pridonijeli profesionalnoj sigurnosti liječnika.

Metode i ispitanici: Provedeno je presječno istraživanje s pomoću namjenskog upitnika, validiranog pilot-studijom (Cronbachov alfa). Uzorak je činio 51 liječnik obiteljske medicine (25–35 godina), od čega 31 (60,8%) iz urbane i 20 (39,2%) iz ruralne sredine. Podaci su prikupljeni putem platforme Google Forms te obrađeni u programu SPSS primjenom Pearsonovog χ^2 i Fisherovog egzaktnog testa.

Rezultati: Nepovjerenje je duboko rodno uvjetovano; liječnice su znatno izloženije skepticizmu (41,2% naspram 11,1% kod muškaraca; $p = 0,004$). Manifestacije su primarno suptilne, poput uputnih pogleda (58,8%), no zabrinjava podatak da 43,1% ispitanika osjeća nepoštivanje medicinskih odluka. Geografski kontekst nije pokazao statistički značajnu razliku u učestalosti nepovjerenja ($\chi^2=2,705$; $p = 0,439$), što potvrđuje da je dobna predrasuda univerzalan izazov neovisan o sredini rada. Kao ključne alate za izgradnju povjerenja liječnici ističu vrijeme i kontinuiran rad s pacijentom (70,6%) te mentorsku podršku (58,8%).

Zaključak: Istraživanje potvrđuje da mladi liječnici doživljavaju značajan otpor pacijenata temeljen na dobi, pri čemu su liječnice u znatno nepovoljnijem položaju. Budući da nepovjerenje izravno utječe na terapijsku suradljivost, nužno je jačati sustave mentorstva i osigurati kontinuitet skrbi. Ti čimbenici omogućuju pacijentima da kroz vrijeme prepoznaju stručnost liječnika, čime se neutralizira početni skepticizam i osigurava kvaliteta zdravstvene zaštite.

LITERATURA:

1. ZHAO, Da-Hai; RAO, Ke-Qin; ZHANG, Zhi-Ruo, “Patient Trust in Physicians: Empirical Evidence from Shanghai, China”, Chinese Medical Journal (English Edition), 129, 7, Beijing : Chinese Medical Association, 2016, str. 814–818.
2. NINKOVIĆ, Milica; ILIĆ, Sandra; DAMNJANOVIĆ, Kaja, “Women’s trust in the healthcare system in Serbia: Validation of the Women’s Trust and Confidence in Healthcare System scale”, Women’s Health (London), 20, London : SAGE Publications, 2024, str. e17455057241249864.
3. VAN DUIN, Titia S.; DE CARVALHO FILHO, Marco A.; PYPE, Peter F.; BORGMANN, Susanne; OLOVSSON, Matts H.; JAARSMA, A. Debbie C. et al., “Junior doctors' experiences with interprofessional collaboration: Wandering the landscape”, Medical Education, 56, 4, Oxford : Wiley-Blackwell, 2022, str. 418–431.
4. PETERSON, Lars E.; MORGAN, Zachary J.; ANDRILLA, C. Holly A.; POLLACK, Samantha W.; LONGENECKER, Randal; SCHMITZ, David, et al., “Academic Achievement and Competency in Rural and Urban Family Medicine Residents”, Family Medicine, 55, 3, Kansas City : Society of Teachers of Family Medicine, 2023, str. 152–161.

"Are You a student?" – Young physicians confronting patient mistrust in urban and rural settings

Danijel Gajić[1], Emina Bajrić Čusto[2,4], Sanda Kreimayer Peštić[3,4]

1. Public Institution Health Center Orašje
2. Public Health Institution Health Center Lukavac
3. Public Health Institution Health Center dr "Mustafa Šehović" Tuzla
4. Univerzity of Tuzla

Keywords: prejudice, family medicine, rural health
Correspondence address: Druga ulica bb, Orašje 76270
E-mail: danijel.gajic123@outlook.com
ORCID: Danijel Gajić: 0009-0003-0644-9546
Emina Bajrić Čusto: 0009-0002-4722-491X
Sanda Kreitmayer Peštić: 0000-0002-5083-3049

Introduction with aim: Family medicine practice involves complex operations across diverse socio-economic environments. Rural areas present unique challenges due to staff shortages, a broad clinical scope, and limited diagnostic tools. In the initial phase of their careers, young physicians face a difficult transition from theory to practice, which patients often perceive as a lack of confidence. Such skepticism hinders the establishment of professional authority. The objective of this study was to analyze differences in patient mistrust between urban and rural settings and to identify forms of support that would contribute to the professional security of young doctors.

Methods and Participants: A cross-sectional study was conducted using a dedicated questionnaire, validated through a pilot study (Cronbach's alpha). The sample consisted of 51 family medicine physicians (aged 25–35), with 31 (60.8%) practicing in urban and 20 (39.2%) in rural areas. Data were collected via the Google Forms platform and processed using IBM SPSS Statistics. Statistical significance was determined using Pearson's χ^2 and Fisher's exact tests.

Results: The results indicate that patient mistrust is deeply gender-biased; female physicians are significantly more exposed to skepticism (41.2% vs. 11.1% for males; $p = 0.004$). While manifestations are primarily subtle, such as suggestive glances (58.8%), it is concerning that 43.1% of respondents experience disregard for their medical decisions. Geographical context showed no statistically significant difference in the frequency of mistrust ($\chi^2 = 2.705$; $p = 0.439$), confirming that age-based prejudice is a universal challenge independent of the work environment. Physicians identified time and continuity of care (70.6%) and mentorship support (58.8%) as key tools for building patient trust.

Conclusion: This research confirms that young physicians experience significant age-based resistance from patients, with female doctors in a considerably more disadvantaged position. Since mistrust directly impacts therapeutic compliance, it is essential to strengthen mentorship systems and ensure continuity of care. These factors allow patients to recognize clinical expertise over time, thereby neutralizing initial skepticism and ensuring the quality of healthcare delivery.

REFERENCES:

1. ZHAO, Da-Hai; RAO, Ke-Qin; ZHANG, Zhi-Ruo, "Patient Trust in Physicians: Empirical Evidence from Shanghai, China", Chinese Medical Journal (English Edition), 129, 7, Beijing : Chinese Medical Association, 2016, str. 814–818.
2. NINKOVIĆ, Milica; ILIĆ, Sandra; DAMNJANOVIĆ, Kaja, "Women's trust in the healthcare system in Serbia: Validation of the Women's Trust and Confidence in Healthcare System scale", Women's Health (London), 20, London : SAGE Publications, 2024, str. e17455057241249864.
3. VAN DUIN, Titia S.; DE CARVALHO FILHO, Marco A.; PYPE, Peter F.; BORGMANN, Susanne; OLOVSSON, Matts H.; JAARSMA, A. Debbie C. et al., "Junior doctors' experiences with interprofessional collaboration: Wandering the landscape", Medical Education, 56, 4, Oxford : Wiley-Blackwell, 2022, str. 418–431.
4. PETERSON, Lars E.; MORGAN, Zachary J.; ANDRILLA, C. Holly A.; POLLACK, Samantha W.; LONGENECKER, Randal; SCHMITZ, David, et al., "Academic Achievement and Competency in Rural and Urban Family Medicine Residents", Family Medicine, 55, 3, Kansas City : Society of Teachers of Family Medicine, 2023, str. 152–161.

Extended Abstract
Mladi istraživači / znanstvenici

„Ljetna djeca“ – rizična skupina za autoimuni tireoiditis? Utjecaj prenatalne insolacije na autoimunost štitnjače

Emina Bajrić Čusto[1,4], Danijel Gajić[2], Senada Selmanović[3,4]

1. JZU Dom zdravlja Lukavac
2. JU Dom zdravlja Orašje
3. JZNU Dom zdravlja dr “Mustafa Šehović” Tuzla
4. Univerzitet u Tuzli

Ključne riječi: autoimuni tireoiditis, sunčeva svjetlost, vitamin D
Adresa za dopisivanje: Kulina bana, Lukavac 75300
E adresa: emina_bajric3@hotmail.com
ORCID: Emina Bajrić Čusto: 0009-0002-4722-491X
Danijel Gajić: 0009-0003-0644-9546
Senada Selmanović: 0000-0002-7246-9057

Uvod s ciljem: Etiologija autoimunih bolesti štitnjače (AITD) obuhvaća složenu interakciju genetike i okolišnih čimbenika. Prenatalna insolacija, koja modulira status vitamina D i utječe na imunološko programiranje fetusa, mogla bi biti jedan od ključnih čimbenika za razvoj AITD u postnatalnoj životnoj dobi osoba. Paradoksalno, djeca rođena ljeti svoj najosjetljiviji rani fetalni razvoj prolaze tijekom zimskih mjeseci. Cilj ovog istraživanja je utvrditi postoji li korelacija između mjeseca rođenja i pojave AITD-a, istražujući je li prvi trimestar gestacije u razdoblju niske insolacije (listopad–ožujak) statistički češći kod pacijenata s AITD-om u usporedbi s kontrolnom skupinom pacijenata s neautoimunom hipotireozom.

Metode i ispitanici: Planirano je retrospektivno istraživanje na dvije skupine ispitanika: eksperimentalnoj (potvrđen AITD) i kontrolnoj (neautoimuna hipotireoza). Uz uvid u medicinsku dokumentaciju, s pacijentima će se provesti strukturirani intervju radi verifikacije gestacijske dobi. Ovaj korak je ključan za isključivanje prijevremeno rođenih osoba te precizan izračun prvog trimestra za svakog ispitanika rođenog u terminu. Statistička obrada u SPSS-u koristit će Pearsonov χ^2 za usporedbu učestalosti rođenja u mjesecima niske insolacije između dviju skupina.

Očekivani rezultati: Pretpostavlja se da će skupina s AITD-om pokazati značajno veću učestalost prvog trimestra u mjesecima s minimalnom insolacijom. Takav nalaz sugerirao bi da deficit sunčevog zračenja u kritičnim fazama organogeneze specifično pridonosi gubitku imunološke tolerancije, neovisno o drugim uzrocima disfunkcije štitnjače.

Zaključak: Rezultati bi mogli potvrditi hipotezu o "sezonskom programiranju" autoimunosti i redefinirati preporuke za suplementaciju vitaminom D tijekom trudnoće. S obzirom na to da je za čvrste dokaze potreban velik i geografski raznolik uzorak, pozivamo druge istraživače i centre da se priključe studiji. Multicentrična suradnja osnažila bi statističku snagu istraživanja i doprinijela globalnom razumijevanju prevencije autoimunih poremećaja.

LITERATURA:

1. DURÁ-TRAVÉ, Tomás; GALLINAS-VICTORIANO, Francisco, “Autoimmune Thyroiditis and Vitamin D”, International Journal of Molecular Sciences, 25, 6, Basel : MDPI, 2024, str. 3154.
2. VIEIRA, Inês; RODRIGUES, Diana; PAIVA, Isabel, “Vitamin D and Autoimmune Thyroid Disease : Cause, Consequence, or a Vicious Cycle?”, Nutrients, 12, 9, Basel : MDPI, 2020, str. 2791.
3. KYRGIOS, Ioanna; GIZA, Sofia; TSINOPOULOU, Vasiliki; MAGGANA, Irene; HAIDICH, Anna-Bettina; GALLI-TSINOPOULOU, Agathoclia, “Seasonality of month of birth in children and adolescents with autoimmune thyroiditis: a continuing conundrum”, Journal of Pediatric Endocrinology and Metabolism, 31, 10, Berlin : De Gruyter, 2018, str. 1123–1131.
4. RAMOS-LEVÍ, Ana; COLLADO, Guillermo; MARAZUELA, Manuel, “Seasonality of month of birth in patients with autoimmune endocrine diseases : A systematic review”, Endocrinología, Diabetes y Nutrición (English Edition), 69, 10, Barcelona : Elsevier España, 2022, str. 779–790.

Extended Abstract
Young researchers / scientists

“Summer-born children” – a risk group for autoimmune thyroiditis? The impact of prenatal sunlight exposure on thyroid autoimmunity

Emina Bajrić Čusto[1,4], Danijel Gajić[2], Senada Selmanović[3,4]

1. Public Health Institution Health Center Lukavac
2. Public Institution Health Center Orašje
3. Public Health Institution Health Center Dr “Mustafa Šehović” Tuzla
4. University of Tuzla

Keywords: autoimmune thyroiditis, sunlight, vitamin D
Correspondence address: Kulina bana, Lukavac 75300
E-mail: emina_bajric3@hotmail.com
ORCID: Danijel Gajić: 0009-0003-0644-9546
Emina Bajrić Čusto: 0009-0002-4722-491X
Sanda Kreitmayer Peštić: 0000-0002-5083-3049

Introduction and objective: The aetiology of autoimmune thyroid diseases (AITD) involves a complex interaction between genetic and environmental factors. Prenatal sunlight exposure, which modulates vitamin D status and influences fetal immune programming, may represent one of the key determinants of AITD development later in life. Paradoxically, children born in summer experience their most sensitive early fetal development during the winter months. The aim of this study is to determine whether an association exists between month of birth and the occurrence of AITD, by examining whether the first trimester of gestation during periods of low sunlight exposure (October–March) is statistically more frequent among patients with AITD compared with a control group of patients with non-autoimmune hypothyroidism.

Methods and participants: A retrospective study is planned in two groups of participants: an experimental group (patients with confirmed AITD) and a control group (patients with non-autoimmune hypothyroidism). In addition to a review of medical records, structured interviews will be conducted to verify gestational age. This step is essential to exclude preterm births and to enable an accurate calculation of the first trimester for each participant born at term. Statistical analysis will be performed using SPSS software. Pearson’s χ^2 test will be used to compare the frequency of first-trimester exposure during months of low sunlight between the two groups.

Expected results: It is expected that the AITD group will show a significantly higher frequency of first-trimester exposure during months with minimal sunlight. Such a finding would suggest that reduced solar radiation during critical phases of organogenesis specifically contributes to the loss of immune tolerance, independently of other causes of thyroid dysfunction.

Conclusion: The results may support the hypothesis of “seasonal programming” of autoimmunity and help redefine recommendations for vitamin D supplementation during pregnancy. As robust evidence requires a large and geographically diverse sample, we invite other researchers and centres to join this study. Multicentre collaboration would strengthen the statistical power of the research and contribute to a broader global understanding of the prevention of autoimmune disorders.

REFERENCES:

1. DURÁ-TRAVÉ, Tomás; GALLINAS-VICTORIANO, Francisco, “Autoimmune Thyroiditis and Vitamin D”, International Journal of Molecular Sciences, 25, 6, Basel : MDPI, 2024, str. 3154.
2. VIEIRA, Inês; RODRIGUES, Diana; PAIVA, Isabel, “Vitamin D and Autoimmune Thyroid Disease : Cause, Consequence, or a Vicious Cycle?”, Nutrients, 12, 9, Basel : MDPI, 2020, str. 2791.
3. KYRGIOS, Ioanna; GIZA, Sofia; TSINOPOULOU, Vasiliki; MAGGANA, Irene; HAIDICH, Anna-Bettina; GALLI-TSINOPOULOU, Agathoclia, “Seasonality of month of birth in children and adolescents with autoimmune thyroiditis: a continuing conundrum”, Journal of Pediatric Endocrinology and Metabolism, 31, 10, Berlin : De Gruyter, 2018, str. 1123–1131.
4. RAMOS-LEVÍ, Ana; COLLADO, Guillermo; MARAZUELA, Manuel, “Seasonality of month of birth in patients with autoimmune endocrine diseases : A systematic review”, Endocrinología, Diabetes y Nutrición (English Edition), 69, 10, Barcelona : Elsevier España, 2022, str. 779–790.

Kronična abdominalna bol: uloga obiteljskog liječnika u otkrivanju stenoze trunkusa celijakusa – prikaz slučaja

Matea Matić Ličanin[1], Jelena Šakić Radetić[1,2]

1. Medicinski fakultet Osijek, Sveučilište Josipa Jurja Strossmayera u Osijeku
2. Dom zdravlja Osječko-baranjske županije

Ključne riječi: abdominalna bol, celijačna arterija, obiteljska medicina, primarna zdravstvena zaštita
Adresa za dopisivanje: Matea Matić Ličanin, Josipa Huttlera 4, Osijek
E adresa: mamatic@mefos.hr
ORCID: Matea Matić Ličanin: 0000-0003-4429-3135
Jelena Šakić Radetić: 0000-0002-9935-4962

Uvod s ciljem: Kronična abdominalna bol jedan je od najčešćih dijagnostičkih izazova u kliničkoj praksi, često s dugotrajnim tijekom i brojnim urednim nalazima standardne internističke i ginekološke obrade. U manjem broju slučajeva uzrok je vaskularna patologija, poput stenoze trunkusa celijakusa i sindroma kompresije celijačnog debla, čiji su tipični simptomi postprandijalna bol, gubitak tjelesne težine, nadutost, mučnina i povraćanje. Premda slikovne metode poput CT/MR angiografije omogućuju jasnu verifikaciju, dijagnoza je često odgođena zbog nespecifične kliničke slike i početnog fokusa na češće gastroenterološke uzroke. Prikazan je slučaj pacijentice s abdominalnom boli u trajanju od tri godine kod koje je nakon opsežne obrade potvrđena stenoza trunkusa celijakusa. Cilj rada je naglasiti važnost promišljanja o vaskularnim etiologijama kod dugotrajnih, neobjašnjivih simptoma te ulogu liječnika obiteljske medicine u prepoznavanju atipičnog tijeka bolesti i indiciranju daljnje obrade.

Prikaz slučaja: Pacijentica je dugogodišnja hipertoničarka s poznatom koronarnom bolešću, hiperlipidemijom, gastroezofagealnom refluksnom bolešću i kroničnim gastritisom. U anamnezi navodi operaciju hemoroida i apendektomiju, kao i ranije psihijatrijsko praćenje zbog anksiozno-depresivnog sindroma. Posljednje tri godine žali se na izraženije bolove u trbuhu, intenzivnije nakon obroka i pri vertikalizaciji, uz blagi gubitak tjelesne težine. Učinjena je opsežna ginekološka obrada zbog ovarijskih cisti i povišenih tumorskih biljega CA 15-3 i HE4, no zaključeno je da navedeno nije uzrok bolova. U više navrata pregledana je po gastroenterologu i abdominalnom kirurgu te je učinjena preporučena endoskopska dijagnostika, uz postavljanje dijagnoze kroničnog gastritisa i GERB-a. Na ponovljenoj kolonoskopiji uočen je bijeli stelatni ožiljak u području desne fleksure, suspektan na raniju ishemijsku leziju, nakon čega je dijagnostika usmjerena prema vaskularnoj obradi. CT angiografijom opisana je stenoza gornje mezenterične arterije i trunkusa celijakusa. Pacijentica je operirana, a postoperativni oporavak protekao je uredno, uz značajnu regresiju simptoma.

Rasprava: Kronična abdominalna bol čest je, ali dijagnostički zahtjevan problem, osobito u bolesnika s višestrukim komorbiditetima kod kojih se simptomi često pripisuju češćim gastroenterološkim, muskuloskeletnim ili psihogenim uzrocima. Objavljeni prikazi slučajeva pokazuju sličan dijagnostički obrazac, s višegodišnjim trajanjem simptoma prije postavljanja dijagnoze. Posebnost ovog slučaja je u dugotrajnom poznavanju pacijentice u našoj skrbi, što je omogućilo prepoznavanje nesrazmjera između simptoma i početno urednih nalaza. Naime, nakon isključenja najčešćih mogućih uzroka boli, daljnji dijagnostički proces bio je izrazito dugotrajan i iscrpljujući, praćen višestrukim upućivanjima na iste konzultacije i dijagnostičke metode, bez jasnog smjera. Pacijentica je u više navrata ponovno upućivana u primarnu zdravstvenu zaštitu bez jasnog dijagnostičkog zaključka. S obzirom na perzistenciju, ali i progresiju simptoma, pacijentici je značajno narušeno mentalno zdravlje i kvaliteta života. Slučaj naglašava ulogu liječnika obiteljske medicine u prepoznavanju atipičnog tijeka bolesti i koordinaciji dijagnostičkog procesa, ali i potrebu ranijeg razmišljanja o vaskularnim uzrocima u bolesnika s kardiovaskularnim rizikom.

Zaključak: Stenoza trunkusa celijakusa, ateroskleroska ili kompresijska, rijedak je, ali klinički važan uzrok kronične abdominalne boli. Rana sumnja na vaskularnu etiologiju u bolesnika s kardiovaskularnim rizikom može skratiti dijagnostički put i omogućiti pravodobno liječenje. Prikaz slučaja naglašava važnost cjelovitog i kontinuiranog pristupa u obiteljskoj medicini te ulogu liječnika obiteljske medicine kao ključne karike u prepoznavanju atipičnih prezentacija bolesti i osiguravanju pravodobne i koordinirane multidisciplinarne skrbi.

LITERATURA:

1. Loukas M, Pinyard J, Vaid S, Kinsella C, Tariq A, Tubbs RS. Clinical anatomy of celiac artery compression syndrome: a review. Clin Anat. 2007;20(6):612-7. doi:10.1002/ca.20473.
2. Kim EN, Lamb K, Relles D, Moudgill N, DiMuzio PJ, Eisenberg JA. Median arcuate ligament syndrome – review of this rare disease. JAMA Surg. 2016;151(5):471-7. doi:10.1001/jamasurg.2016.0002.
3. Goodall R, Langridge B, Onida S, Ellis M, Lane T, Davies AH. Median arcuate ligament syndrome. J Vasc Surg. 2020;71(6):2170-6. doi:10.1016/j.jvs.2019.11.012.
4. Nikolova D, Antovic S, Karagjozov P, et al. Chronic abdominal pain, an overlooked diagnosis of median arcuate ligament syndrome (MALS). Prilozi. 2022;43:95-9. doi: 10.2478/prilozi-2022-0009.
5. Zambrano-Lara M, Gonzalez-Urquijo M, Lozano-Balderas G, Rodarte-Shade M, Fabiani MA. Median arcuate ligament syndrome as a rare cause of chronic abdominal pain. Rev Gastroenterol Mex (Engl Ed). 2021;86(2):199-201. doi:10.1016/j.rgmxen.2020.05.008.

Chronic abdominal pain: the role of the family physician in detecting celiac trunk stenosis – a case report

Matea Matić Ličanin[1], Jelena Šakić Radetić[1,2]

1. Faculty of Medicine Osijek, Josip Juraj Strossmayer University in Osijek
2. Osijek-Baranja County Health Center

Keywords: abdominal pain, celiac artery, family practice, primary health care
Correspondence address: Matea Matić Ličanin, Josipa Huttlera 4, Osijek
E-mail: mamatic@mefos.hr
ORCID: Matea Matić Ličanin: 0000-0003-4429-3135
Jelena Šakić Radetić: 0000-0002-9935-4962

Introduction with aim: Chronic abdominal pain is one of the most common diagnostic challenges in clinical practice, often characterized by a prolonged course and numerous normal findings on standard internal medicine and gynecological evaluations. In a smaller proportion of cases, the underlying cause is vascular pathology, such as celiac trunk stenosis and celiac artery compression syndrome, with typical symptoms including postprandial pain, weight loss, bloating, nausea, and vomiting. Although imaging methods such as CT/MR angiography allow clear verification, the diagnosis is often delayed due to the non-specific clinical picture and the initial focus on more common gastroenterological causes This paper presents the case of a patient with abdominal pain lasting three years in whom celiac trunk stenosis was confirmed after extensive diagnostic evaluation. The aim of the paper is to emphasize the importance of thinking about vascular etiologies for long-term, unexplained symptoms and the role of family medicine doctors in recognizing the atypical course of the disease and indicating further treatment.

Case report: The patient is a long-standing hypertensive woman with known coronary artery disease, hyperlipidemia, gastroesophageal reflux disease, and chronic gastritis. Her medical history includes hemorrhoid surgery and appendectomy, as well as previous psychiatric follow-up for anxiety-depressive disorder. Over the past three years, she has experienced pronounced abdominal pain, more intense after meals and upon assuming an upright position, accompanied by mild weight loss. Extensive gynecological evaluation was performed due to ovarian cysts and elevated tumor markers CA 15-3 and HE4; however, these findings were not considered the cause of her symptoms. She was repeatedly evaluated by a gastroenterologist and an abdominal surgeon, and underwent recommended endoscopic diagnostic procedures, resulting in diagnoses of chronic gastritis and GERD. A repeat colonoscopy revealed a white stellate scar in the area of the right colic flexure, suspicious for a previous ischemic lesion, after which diagnostic workup was directed toward vascular assessment. CT angiography demonstrated stenosis of the superior mesenteric artery and the celiac trunk. The patient underwent surgical treatment, and the postoperative course was uneventful, with marked regression of symptoms.

Discussion: Chronic abdominal pain is a common yet diagnostically demanding condition, particularly in patients with multiple comorbidities in whom symptoms are often attributed to more prevalent gastroenterological, musculoskeletal, or psychogenic causes. Published case reports describe similar diagnostic patterns, with symptoms persisting for years before a definitive diagnosis is established. A distinctive feature of this case is the long-term continuity of care in family medicine, which enabled recognition of the discrepancy between symptom severity and initially normal diagnostic findings. After exclusion of the most common causes of abdominal pain, the subsequent diagnostic process was prolonged and exhausting, characterized by repeated referrals to the same consultations and diagnostic procedures without clear direction. The patient was repeatedly referred back to primary care without a definitive diagnostic conclusion. Due to the persistence and progression of symptoms, her mental health and quality of life were significantly impaired. This case underscores the role of the family physician in recognizing atypical disease courses and coordinating the diagnostic process, as well as the need for earlier consideration of vascular causes in patients with cardiovascular risk factors.

Conclusion: Celiac trunk stenosis, whether atherosclerotic or compressive in origin, is a rare but clinically important cause of chronic abdominal pain. Early suspicion of a vascular etiology in patients with cardiovascular risk factors may shorten the diagnostic pathway and enable timely treatment. This case highlights the importance of a comprehensive and continuous approach in family medicine and the role of the family physician as a key figure in recognizing atypical disease presentations and ensuring timely, coordinated multidisciplinary care.

REFERENCES:

1. Loukas M, Pinyard J, Vaid S, Kinsella C, Tariq A, Tubbs RS. Clinical anatomy of celiac artery compression syndrome: a review. Clin Anat. 2007;20(6):612-7. doi:10.1002/ca.20473.
2. Kim EN, Lamb K, Relles D, Moudgill N, DiMuzio PJ, Eisenberg JA. Median arcuate ligament syndrome – review of this rare disease. JAMA Surg. 2016;151(5):471-7. doi:10.1001/jamasurg.2016.0002.
3. Goodall R, Langridge B, Onida S, Ellis M, Lane T, Davies AH. Median arcuate ligament syndrome. J Vasc Surg. 2020;71(6):2170-6. doi:10.1016/j.jvs.2019.11.012.
4. Nikolova D, Antovic S, Karagjozov P, et al. Chronic abdominal pain, an overlooked diagnosis of median arcuate ligament syndrome (MALS). Prilozi. 2022;43:95-9. doi: 10.2478/prilozi-2022-0009.
5. Zambrano-Lara M, Gonzalez-Urquijo M, Lozano-Balderas G, Rodarte-Shade M, Fabiani MA. Median arcuate ligament syndrome as a rare cause of chronic abdominal pain. Rev Gastroenterol Mex (Engl Ed). 2021;86(2):199-201. doi:10.1016/j.rgmxen.2020.05.008.

Procjena promjena kognitivnog statusa tijekom onkološkog liječenja - možemo li izmjeriti?

Maja Ploh[1,2], Duška Petranović[2,3]

1. Istarski domovi zdravlja, Pula
2. Medicinski fakultet Sveučilišta u Rijeci
3. Zavod za hematologiju, Klinički bolnički centar Rijeka

Ključne riječi: novotvorine, mentalno zdravlje, kognitivni poremećaji
Adresa za dopisivanje: Maja Ploh, Flanatička 27, Pula
E adresa: maja.ploh95@gmail.com
ORCID: Maja Ploh: https: 0000-0001-5070-3079
Duška Petranović: 0000-0001-9225-956X

Uvod s ciljem: Kognitivno oštećenje koje nadilazi očekivani kognitivni pad normalnog starenja može biti primjetno kod 25% pacijenata tijekom onkološkog liječenja te je obično progresivno protekom vremena. Isto ima prilike pratiti obiteljski liječnik kao pružatelj kontinuirane skrbi na prvoj liniji. Cilj ovog istraživanja bio je procijeniti i usporediti kognitivnu funkciju kod bolesnika pri početku i tijekom onkološkog liječenja.

Ispitanici i metode: U istraživanje je uključeno 100 onkoloških pacijenata mjesec dana nakon početka aktivnog liječenja i 100 zdravih sudionika. Kognitivna funkcija kod ovih pacijenata procijenjena je pomoću Mini-mentalnog testa (MMSE) i Kompleksnog reakciometra Drenovac (CRD) – hrvatskog računalnog proizvoda namijenjenog kronometrskom testiranju performansi sudionika u konvergentnom mišljenju, prostornoj vizualizaciji, vizualnoj orijentaciji, učenju i pamćenju, operativnom mišljenju, reakciji na zvuk, reakciji na svjetlo, mjerenjem vremena potrebnog za završetak testa.

Rezultati: Pacijenti oboljeli od raka koji su sudjelovali u ovoj studiji pokazuju 58% oštećenja u testovima konvergentnog induktivnog razmišljanja, 50% oštećenja u prostornoj vizualizaciji, 55% smanjenje vizualne orijentacije, 32% regresije u sposobnostima učenja i pamćenja, 49% pada u testu operativnog razmišljanja, bez oštećenja u reakciji na zvuk, i 36% oslabljenosti u testu reakcije na svjetlo, u usporedbi sa zdravim sudionicima, mjerena kronometrijskim instrumentom. Rezultati MMSE otkrivaju da pacijenti koji se bore s rakom, za razliku od zdravih sudionika, imaju 20% smanjenje sposobnosti računanja, 33% oštećenje vizualnog prepoznavanja, 25% niže rezultate u testovima učenja i pamćenja te 33% niži rezultat u testu verbalnih uputa, ali bez primjetne razlike u prostornoj vizualizaciji i vizualnom prepoznavanju, kao i u praćenju vizualnih (pismenih) uputa.

Zaključak: Ovo istraživanje otkriva mjerljivo kognitivno oštećenje kod pacijenata s rakom, najizraženije na području konvergentnog induktivnog mišljenja, sposobnostima učenja i pamćenja te operativnom mišljenju u oba provedena testa. Testiranje CRD-om pokazuje se osjetljivijim u svim kategorijama testiranja te ne uključuje testove jezika, verbalne i govorne sposobnosti. Stoga ovaj kronometrijski instrument može biti koristan i komplementaran drugim instrumentima procjene kognitivnih funkcija u kliničkoj praksi kroz specijalizirana savjetovališta u primarnoj zdravstvenoj zaštiti.

LITERATURA:

1. Fleming B, Edison P, Kenny L. Cognitive impairment after cancer treatment: mechanisms, clinical characterization, and management. BMJ. 2023;380:e071726. doi:10.1136/bmj-2022-071726
2. Zhang Y, et al. Cancer-related cognitive impairment: a practical guide for oncologists. JCO Oncol Pract. 2025;21:1377-1381. doi:10.1200/OP-24-00953
3. Demos-Davies K, Lawrence J, Seelig D. Cancer related cognitive impairment: a downside of cancer treatment. Front Oncol. 2024;14:1387251. doi:10.3389/fonc.2024.1387251

Assessment of changes in cognitive status during oncology treatment - can we measure it?

Maja Ploh[1,2], Duška Petranović[2,3]

1. Istrian health center, Pula
2. Faculty of medicine, University of Rijeka
3. Department of Hematology, Clinical Hospital Center Rijeka

Keywords: neoplasm, mental health, cognitive disorders
Correspondence address: Maja Ploh, Flanatička 27, Pula
E-mail: maja.ploh95@gmail.com
ORCID: Maja Ploh: https: 0000-0001-5070-3079
Duška Petranović: 0000-0001-9225-956X

Introduction with aim: Cognitive impairment beyond the expected cognitive decline of normal aging can be observed in 25% of patients during oncology treatment and is usually progressive over time. It is also monitored by the family physician as a continuous frontline care provider. The aim of this study was to assess and compare cognitive function in patients at the beginning and during oncology treatment.

Participants and methods: The study included 100 oncology patients at the begining and one month after the start of active treatment and 100 healthy participants. Cognitive function in these patients was assessed using the Mini-Mental State Examination (MMSE) and the Complex Reactionometer Drenovac (CRD) – a Croatian computer product intended for chronometric testing of participants' performance in convergent thinking, spatial visualization, visual orientation, learning and memory, operational thinking, reaction to sound, reaction to light, by measuring the time required to complete the test.

Results: Cancer patients who participated in this study showed 58% impairment in convergent inductive reasoning tests, 50% impairment in spatial visualization, 55% reduction in visual orientation, 32% regression in learning and memory skills, 49% decline in operational reasoning tests, without impairment in response to sound, and 36% impairment in response to light, compared to healthy participants, as measured by a chronometric instrument. MMSE results revealed that cancer patients, in contrast to healthy participants, had a 20% reduction in calculation skills, a 33% impairment in visual recognition, a 25% lower score on learning and memory tests, and a 33% lower score on a verbal instructions test, but no noticeable difference in spatial visualization and visual recognition, or in following visual (written) instructions.

Conclusion: This study reveals measurable cognitive impairment in cancer patients, most pronounced in the areas of convergent inductive thinking, learning and memory abilities, and operational thinking in both tests. CRD testing is shown to be more sensitive in all testing categories and does not include tests of language, verbal and speech abilities. Therefore, this chronometric instrument may be useful and complementary to other instruments for assessing cognitive functions in clinical practice through specialized consultations in primary health care.

REFERENCES:

1. Fleming B, Edison P, Kenny L. Cognitive impairment after cancer treatment: mechanisms, clinical characterization, and management. BMJ. 2023;380:e071726. doi:10.1136/bmj-2022-071726
2. Zhang Y, et al. Cancer-related cognitive impairment: a practical guide for oncologists. JCO Oncol Pract. 2025;21:1377-1381. doi:10.1200/OP-24-00953
3. Demos-Davies K, Lawrence J, Seelig D. Cancer related cognitive impairment: a downside of cancer treatment. Front Oncol. 2024;14:1387251. doi:10.3389/fonc.2024.1387251

Hepatitis C u Zadarskoj županiji: znanje, stavovi, rizični čimbenici

Andrea Baćac[1], Ivana Bator Pavić[1], Jasna Vučak[2,3]

1. Dom zdravlja Zadarske županije
2. Medicinski fakultet Sveučilišta u Rijeci, Katedra za obiteljsku medicinu
3. Specijalistička ordinacija obiteljske medicine J.Vučak Sukošan

Ključne riječi: infekcija hepatitis C virusom, stavovi i znanja, liječnici opće/obiteljske medicine
Adresa za dopisivanje: Jasna Vučak , Hrvatskih branitelja 12, 23000 Sukošan
E adresa: jasna.vucak@yahoo.com
ORCID: Andrea Baćac: 0000-0003-3011-7894
Ivana Bator Pavić: 0000-0002-4861-2175
Jasna Vučak: 0000-0003-4328-531X

Uvod s ciljem. Infekcija hepatitis C virusom (iHCV) predstavlja značajan javnozdravstveni problem na globalnoj razini s prevalencijom od 1,5–2,2%. Pravodobno prepoznavanje i učinkovito liječenje ključno je za sprječavanje širenja infekcije i razvoja kroničnih komplikacija. Napredak u antivirusnoj terapiji omogućio je postizanje izlječenja, čime se dodatno naglašava važnost edukacije stanovništva o rizičnim čimbenicima, simptomima, dijagnostici i liječenju. Cilj ovog istraživanja je ispitati znanja i stavove o iHCV. U nastavku projekta planira se ispitanike s rizičnim faktorima, na temelju upitnika, pozvati i preporučiti testiranje na hepatitis C.

Metodologija. U istraživanje je uključeno 29 liječnika opće/obiteljske medicine u Zadarskoj županiji. Podaci su prikupljeni pomoću strukturiranog anketnog upitnika izrađenog posebno za potrebe istraživanja. Slučajno odabrani pacijenti anketirani su uz potpisani informirani pristanak i poštivanje Helsinške deklaracije.

Rezultati. Analizirani su podaci 1014 ispitanika, prosječne dobi 45,6 (± 12,5 godina), 67,3% ženskog spola. Završenu srednju školu je imalo 51,5%, a 36,8% fakultet. Da je iHCV izlječiva bolest smatra 60,4% ispitanika, 31,5% je pogrešno navelo da postoji cjepivo protiv hepatitisa C. Mlađi ispitanici imali su značajno više točnih odgovora na pitanja o karakteristikama bolesti (p=0,006), kao i ispitanici s višim stupnjem obrazovanja (p<0,001). Ispitanici s povišenim jetrenim enzimima pokazali su nižu razinu znanja u usporedbi s ispitanicima urednih nalaza (p=0,022). Većina ispitanika (81,5%) smatra hepatitis C teškom bolešću, a 75,6% je znalo da iHCV ne pogađa isključivo intravenske ovisnike. Među ispitanicima su zabilježeni sljedeći rizični čimbenici: povišeni jetreni enzimi 10,1%, više od sedam spolnih partnera tijekom života 16,2%, transfuzija krvi prije 1993. godine 4,1% te život u kućanstvu s osobom oboljelom od hepatitisa C 2,0%.

Rasprava. Rezultati ovog istraživanja ukazuju na značajne razlike u razini znanja o iHCV ovisno o dobi, obrazovanju i prisutnosti rizičnih čimbenika. Utvrđena je statistički značajna razlika u znanju o iHCV između mlađih i starijih sudionika, međutim, čak i među mladima 40% ispitanika nije znalo odgovor na pitanje o asimptomatskim slučajevima. Posebno je zabrinjavajuće slabije znanje među osobama s povišenim jetrenim enzimima.

Naši rezultati u skladu su sa sličnim istraživanjima provedenima u Italiji i Grčkoj koja također pokazuju bolju informiranost kod mlađih, visoko obrazovanih i žena.

Ovo istraživanje ukazuje na potrebu za ciljanim edukacijskim intervencijama u populaciji, osobito među rizičnim skupinama i osobama nižeg obrazovanja.

Zaključak. Uloga liječnika opće/obiteljske medicine je u prepoznavanju pacijenata s povećanim rizikom od obolijevanja, edukaciji o mogućnostima prevencije, dijagnostike i liječenja HCV.

LITERATURA:

1. Lo Moro G, Scaioli G, Vola L, Guastavigna L, Frattin R, De Vito E, et al. Exploring knowledge and awareness of HCV infection and screening test: a cross-sectional survey among an Italian sample. J Community Health. 2023;48(5):769-83. doi:10.1007/s10900-023-01218-4.
2. Kaskafetou S, Karakosta A, Sypsa V, Kalpourtzi N, Gavana M, Vantarakis A, et al. Hepatitis B, C and human immunodeficiency virus knowledge among the general Greek population: results from the Hprolipsis nationwide survey. BMC Public Health. 2022;22(1):2026. doi:10.1186/s12889-022-14353-9.
3. Coyle JR, de Boer MG. Hepatitis C in the United States: the importance of education and awareness among high-risk populations. J Health Care Poor Underserved. 2018;29(3):1052-60. doi:10.1353/hpu.2018.0033.
4. Sanghvi R, Surendranath S. Assessing knowledge and awareness of hepatitis C among patients at a tertiary care center in southern India. Indian J Gastroenterol. 2020;39(3):233-40. doi:10.1007/s12664-020-01017-1.

Extended Abstract
Young researchers / scientists

Hepatitis C in Zadar County: Knowledge, Attitudes, and Risk Factors

Andrea Baćac[1], Ivana Bator Pavić[1], Jasna Vučak[2,3]

1. Health Center of Zadar County
2. Faculty of Medicine, University of Rijeka, Department of Family Medicine
3. Specialist Family Medicine Practice, J. Vučak, Sukošan

Keywords: hepatitis C virus infection, attitudes and knowledge, general/family medicine physicians
Correspondence address: Jasna Vučak , Hrvatskih branitelja 12, 23000 Sukošan
E-mail: jasna.vucak@yahoo.com
ORCID: Andrea Baćac: 0000-0003-3011-7894
Ivana Bator Pavić: 0000-0002-4861-2175
Jasna Vučak: 0000-0003-4328-531X

Introduction with Aim. Infection with the hepatitis C virus (iHCV) represents a significant public health issue globally, with a prevalence of 1.5-2.2%. Timely identification and effective treatment are crucial for preventing the spread of infection and the development of chronic complications. Advances in antiviral therapy have made it possible to achieve a cure, highlighting the importance of educating the population about risk factors, symptoms, diagnostics, and treatment. The objective of this study is to assess knowledge and attitudes regarding iHCV. Following the study, participants identified with risk factors will be invited and encouraged to undergo hepatitis C testing based on the survey results.

Methods. The study involved 29 general/family medicine physicians in Zadar County. Data were collected using a structured questionnaire specifically developed for this research. Randomly selected patients were surveyed with signed informed consent, complying with the Helsinki Declaration.

Results. Data from 1014 respondents were analyzed, with a mean age of 45.6 (± 12.5 years), of which 67.3% were female. Among the participants, 51.5% had completed secondary education, and 36.8% had an university degree. 60.4% of respondents believed that iHCV is a curable disease, while 31.5% mistakenly stated that a vaccine for hepatitis C exists. Younger respondents had significantly more correct answers regarding disease characteristics ($p=0.006$), as did respondents with higher education levels ($p<0.001$). Respondents with elevated liver enzymes demonstrated lower levels of knowledge compared to those with normal findings ($p=0.022$). A majority of respondents (81.5%) viewed hepatitis C as a severe disease, and 75.6% recognized that HCV does not exclusively affect intravenous drug users. Risk factors recorded among respondents included elevated liver enzymes (10.1%), having more than seven sexual partners in their lifetime (16.2%), receiving a blood transfusion before 1993 (4.1%), and living in a household with a person infected with hepatitis C (2.0%).

Discussion. The results of this study indicate significant disparities in knowledge about iHCV based on age, education, and the presence of risk factors. A statistically significant difference in knowledge about HCV was found between younger and older participants; however, even among younger individuals, 40% were unaware of asymptomatic cases. Particularly concerning is the lower level of knowledge among individuals with elevated liver enzymes. Our findings align with similar studies conducted in Italy and Greece, which also show better awareness among younger, highly educated individuals and females. This research points to the need for targeted educational interventions within the population, especially among at-risk groups and those with lower educational levels.

Conclusion. The role of general/family medicine physicians is critical in identifying patients at increased risk of developing HCV, educating them about prevention, diagnostics, and treatment options.

REFERENCES:

1. Lo Moro G, Scaioli G, Vola L, Guastavigna L, Frattin R, De Vito E, et al. Exploring knowledge and awareness of HCV infection and screening test: a cross-sectional survey among an Italian sample. J Community Health. 2023;48(5):769-83. doi:10.1007/s10900-023-01218-4.
2. Kaskafetou S, Karakosta A, Sypsa V, Kalpourtzi N, Gavana M, Vantarakis A, et al. Hepatitis B, C and human immunodeficiency virus knowledge among the general Greek population: results from the Hprolipsis nationwide survey. BMC Public Health. 2022;22(1):2026. doi:10.1186/s12889-022-14353-9.
3. Coyle JR, de Boer MG. Hepatitis C in the United States: the importance of education and awareness among high-risk populations. J Health Care Poor Underserved. 2018;29(3):1052-60. doi:10.1353/hpu.2018.0033.
4. Sanghvi R, Surendranath S. Assessing knowledge and awareness of hepatitis C among patients at a tertiary care center in southern India. Indian J Gastroenterol. 2020;39(3):233-40. doi:10.1007/s12664-020-01017-1.

7. PRIKAZI SLUČAJA

Akutna hiperglikemijska kriza u ordinaciji obiteljske medicine – što ne činiti

Morana Belović[1], Ivančica Peček[2], Juraj Jug[1]

1. Dom zdravlja Zagreb – Zapad,
2. Specijalistička ordinacija obiteljske medicine Ivančica Peček

Ključne riječi: dijabetička ketoacidoza, hiperglikemijska kriza, hiperglikemijsko-hiperosmolarno stanje, komplikacije dijabetesa
Adresa za dopisivanje: Prilaz baruna Filipovića 11, 10000 Zagreb, Hrvatska
E adresa: moranabelovic@gmail.com
ORCID: Morana Belović: 0009-0001-9335-3301
Ivančica Peček: 0000-0002-3800-2648
Juraj Jug: 0000-0002-3189-1518

Uvod s ciljem: Dijabetes je jedna od najčešćih kroničnih bolesti današnjice i znatan uzrok morbiditeta i mortaliteta. Zahvaljujući naprednim terapijskim mogućnostima, akutne komplikacije dijabetesa u smislu hiperglikemijskih kriza (DKA, HHS) viđaju se rijetko, no neophodno je poznavati njihovo dijagnosticiranje i liječenje. Cilj ovog prikaza slučaja je edukacija o postupanju s pacijentom tijekom akutne komplikacije dijabetesa u ambulanti obiteljske medicine na temelju primjera ne u potpunosti pravilnog zbrinjavanja hiperglikemijske krize.

Prikaz slučaja: Pacijentica se javlja u ambulantu zbog naglo nastale progresivne mučnine, povraćanja, slabosti i omaglice u trajanju od tjedan dana. Negira gubitak svijesti, vrućicu, bolove u trbuhu, bolove ili pritisak u prsima, smetnje mokrenja i defekacije. Dugogodišnja je multimorbiditetna bolesnica s razvijenim kardiorenometaboličkim sindromom te uz njega prisutnom poliartrozom, općim anksiozni poremećajem i glaukomom. U stalnoj terapiji koristi petnaest lijekova, od toga četiri peroralna antidijabetika (metformin, dapagliflozin, sitagliptin, pioglitazon). Iz fizikalnog statusa: pri svijesti, orijentirana, eupnoična, tahikardna (115 otkucaja/min), hipotenzivna (116/64 mmHg). Abdomena palpacijski mekanog i bolnog u donjem desnom kvadrantu. Prisutan blago slatkasti zadah iz usta. U ordinaciji se pacijentici snimi standardni 12-odvodni EKG koji pokaže sinusni ritam frekvencije 100 otkucaja/min, lijevu srčanu os i voltažne kriterije za hipertrofiju lijeve klijetke, bez znakova ishemije miokarda. Izmjeri se glukoza u krvi na samomjeraču, te se dobije vrijednost od 22 mmol/L. Pacijentici se ordinira 8 jedinica inzulina asparta supkutano i 500 mL fiziološke otopine u infuziji kroz pola sata te se naručuje na kontrolu sutradan radi praćenja stanja. Na kontrolni pregled pacijentica donosi rezultate samomjerenja glukoze u krvi večer prije (23,5 mmol/L) i tog jutra (13,5 mmol/L). Dosadašnjoj hipoglikemijskoj terapiji dodaje se inzulin glargin u dozi od 0,2 jedinice po kilogramu tjelesne mase, te se planira prilagodba doze po potrebi za četiri dana. Nakon deset dana pacijentica je hitno hospitalizirana zbog izrazite hiperglikemije (32,9 mmol/L) uzrokovane inzulinopenijom, te se terapija mijenja u intenzivirano inzulinsko liječenje uz 750 mg metformina uvečer.

Rasprava: U slučaju akutnog lošeg osjećanja u pacijenta s poznatom šećernom bolesti, u ordinaciji obiteljske medicine provodi se početna klinička procjena i osnovne dijagnostičke pretrage te se započinje terapija. U ovom je prikazu slučaja inicijalna procjena stanja pacijentice izvedena većinski prema smjernicama, ali ne i zbrinjavanje. Ono se može provesti isključivo u sklopu primarne zdravstvene zaštite u slučaju da je razina glukoze u krvi niža od 15 mmol/L, slijedeći tzv. sick day rules, međutim ako je razina glukoze u krvi viša indicirano je postepeno snižavanje GUK-a intravenskom primjenom inzulina uz pažljivo promatranje ne samo vrijednosti glukoze, već i ketona, elektrolita, acidobaznog statusa i osmolarnosti krvi u bolničkim uvjetima. Po stabilizaciji pacijenta potrebno je odrediti razinu inzulina radi uvođenja intenzivirane inzulinske terapije po potrebi.

Zaključak: Zbrinjavanje akutnog lošeg osjećanja u pacijenta s otprije poznatom šećernom bolesti temelji se na stupnju povišenja glukoze u krvi i pacijentovom općem stanju. U većini slučajeva skrb će se u cijelosti moći provesti na razini primarne zdravstvene zaštite, no ključno je poznavati indikacije za upućivanje pacijenta na višu razinu skrbi te koji se dijagnostički i terapijski postupci mogu provesti u prethodnoj pripremi pacijenta.

LITERATURA:

1. The Royal Australian College of General Practitioners (RACGP), Australian Diabetes Society. Emergency management of hyperglycaemia in primary care. 2018;8.
2. Kitabchi AE, Umpierrez GE, Murphy MB, Barrett EJ, Kreisberg RA, Malone JI, et al. Management of Hyperglycemic Crises in Patients With Diabetes. Diabetes Care. 2001;24(1):131–53.
3. Aldhaeefi M, Aldardeer NF, Alkhani N, Alqarni SM, Alhammad AM, Alshaya AI. Updates in the Management of Hyperglycemic Crisis. Front Clin Diabetes Healthc. 2022;2:820728.

Extended Abstract
Case report

Acute hyperglycemic crisis in family medicine office – pearls and pitfalls

Morana Belović[1], Ivančica Peček[2], Juraj Jug[1]

1. Health center Zagreb West
2. Specialist family medicine practice Ivančica Peček

Keywords: diabetic ketoacidosis, hyperglycemic crisis, hyperglycemic-hyperosmolar state, complications of diabetes
Correspondence address: Prilaz baruna Filipovića 11, 10000 Zagreb, Hrvatska
E-mail: moranabelovic@gmail.com
ORCID: Morana Belović: 0009-0001-9335-3301
Ivančica Peček: 0000-0002-3800-2648
Juraj Jug: 0000-0002-3189-1518

Introduction: Diabetes is one of the most common chronic diseases as well as a significant cause of morbidity and mortality. Thanks to advances in therapeutic options, acute diabetic complications in the form of hyperglycemic crises (DKA, HHS) are now rarely encountered; however, a thorough understanding of their diagnosis and management remains essential. This case report aims to illustrate the management of an acute diabetic complication in a family medicine office, using an example of suboptimal care during a hyperglycemic crisis.

Case report: A female patient presents to family medicine office with a one-week history of progressive nausea, vomiting, weakness and dizziness. She denied loss of consciousness, fever, abdominal pain, chest pain or pressure, urinary or bowel difficulties. She is a long-term multimorbid patient with advanced cardiorenometabolic syndrome, polyarthrosis, general anxiety disorder and glaucoma. Her medication regimen included 15 regular drugs, among them four oral antidiabetics (metformin, dapagliflozin, sitagliptin, pioglitazone). On physical examination, she was conscious, oriented and eupnoic, with tachycardia (115 beats/min) and hypotension (116/64 mmHg). The abdomen was soft with tenderness in the lower right quadrant. The patient's breath had a sweet odor. A standard 12-lead ECG showed sinus rhythm at 100 beats/min, left axis deviation, and voltage criteria for left ventricular hypertrophy, with no signs of myocardial ischemia. A capillary blood glucose level of 22 mmol/L was recorded using a self-monitoring device. The patient recieved 8 units of insulin aspart subcutaneously and 500 mL of saline solution over 30 minutes, and was scheduled for a follow-up the next day to monitor her condition. At follow-up, self-measured blood glucose readings were 23.5 mmol/L in the evening and 13.5 mmol/L the following morning. Insulin glargine was added to her regimen at a dose of 0.2 units/kg, with dose adjustment planned in four days time. Ten days later, the patient was urgently hospitalized due to severe hyperglycemia (32.9 mmol/L) caused by insulinopenia. Her therapy was changed to intensified insulin treatment, with metformin 750 mg administered in the evening.

Discussion: During an episode of acute malaise in a patient with diabetes, initial clinical assessment, basic diagnostic tests, and therapy can be performed in a family medicine setting. In this case report, the patient's initial assessment largely followed current guidelines, whereas the management of treatment deviated in certain aspects. Patients with blood glucose levels below 15 mmol/L can generally be managed at the primary care level by adhering to the so-called "sick day rules." However, in cases of higher blood glucose, gradual reduction with intravenous insulin and careful monitoring of glucose, osmolarity, ketones, electrolytes, and acid-base status in a hospital setting are indicated. Once the patient is stabilized, assessment of insulin levels is necessary to guide initiation of intensified insulin therapy if required.

Conslusion: Management of acute malaise in patients with pre-existing diabetes is guided by the degree of hyperglycemia and the patient's overall condition. In most cases, it can be effectively managed at the primary care level; however, it is essential to recognize the indications for referral to a higher level of care and to understand which diagnostic and therapeutic measures can be initiated prior to hospital presentation.

REFERENCES:

1. The Royal Australian College of General Practitioners (RACGP), Australian Diabetes Society. Emergency management of hyperglycaemia in primary care. 2018;8.
2. Kitabchi AE, Umpierrez GE, Murphy MB, Barrett EJ, Kreisberg RA, Malone JI, et al. Management of Hyperglycemic Crises in Patients With Diabetes. Diabetes Care. 2001;24(1):131–53.
3. Aldhaeefi M, Aldardeer NF, Alkhani N, Alqarni SM, Alhammad AM, Alshaya AI. Updates in the Management of Hyperglycemic Crisis. Front Clin Diabetes Healthc. 2022;2:820728.

Renovaskularna hipertenzija uzrokovana fibromuskularnom displazijom u mlade žene – prikaz slučaja

Nikolina Ivanac[1], Jasna Vučak[2]

1. Dom zdravlja Zadarske županije
2. Specijalistička ordinacija obiteljske medicine Jasna vučak, Sukošan

Ključne riječi: sekundarna hipertenzija; fibromuskularna displazija; renovaskularna hipertenzija; obiteljska medicina; mlada žena
Adresa za dopisivanje: Specijalistička ordinacija obiteljske medicine Jasna Vučak, 23206 Sukošan
E adresa: jnikolina2193@gmail.com
ORCID: Nikolina Ivanac: 0009-0007-1463-1494
Jasna Vučak:0000-0003-4328-531X

Uvod s ciljem. Sekundarna hipertenzija čini manji, ali klinički iznimno važan udio arterijske hipertenzije, osobito u mlađoj populaciji. U mladih žena renovaskularna hipertenzija često je uzrokovana fibromuskularnom displazijom (FMD), rijetkom i često nedovoljno prepoznatom bolešću. Cilj ovog prikaza slučaja je naglasiti ulogu obiteljskog liječnika u ranom prepoznavanju sekundarne hipertenzije i pravodobnom upućivanju na daljnju dijagnostičku obradu.

Prikaz slučaja. 33-godišnja pacijentica s izrazito povišenim vrijednostima arterijskog tlaka (220/100 mmHg), otkrivenim tijekom pregleda u medicini rada. U anamnezi je imala arterijsku hipertenziju od 11. tjedna trudnoće i gestacijski dijabetes, bez razvoja preeklampsije i drugih značajnih kardiovaskularnih čimbenika rizika. Nakon kontrole obiteljskog liječnika uvedena je antihipertenzivna terapija te je upućena na obradu zbog sumnje na sekundarnu hipertenziju. CT angiografijom utvrđene su promjene desne renalne arterije suspektne za FMD. Dijagnoza multifokalne FMD potvrđena je digitalnom subtrakcijskom angiografijom (DSA). Učinjena je perkutana transluminalna angioplastika (PTA), nakon koje je postignuta dobra regulacija arterijskog tlaka uz reduciranu antihipertenzivnu terapiju.

Rasprava. FMD rijedak je, ali važan uzrok sekundarne hipertenzije u mladih žena, koji može dugo ostati neprepoznat zbog nespecifične kliničke slike i urednih inicijalnih nalaza. Patofiziološki se radi o stenozi renalne arterije koja dovodi do hipoperfuzije bubrega, aktivacije renin-angiotenzin-aldosteron sustava i posljedične hipertenzije, obično višeg stupnja. Tipične karakteristike pojave FMD - mlađe žene (30-40 godina), bez drugih kardiovaskularnih rizika, rezistentna hipertenzija, može se očekivati pogoršanje bubrežne funkcije nakon uvođenja ACE/ARB inhibitora. Obzirom na podatak o pojavi arterijske hipertenzije i dijabetesa u trudnoći, pacijentica je trebala biti intenzivnije praćena i obrađena već ranije što je propušteno obzirom da se do saznanja došlo tek nakon što je utvrđena hipertenzija na pregledu medicine rada. Teška hipertenzija u mlađoj dobi i pojava hipertenzije prije 20. tjedna trudnoće trebaju pobuditi sumnju na sekundarni uzrok, što zahtijeva sustavnu dijagnostičku obradu već u primarnoj zdravstvenoj zaštiti.

Zaključak. Obiteljski liječnik ima ključnu ulogu u ranom prepoznavanju sekundarne hipertenzije, koordinaciji dijagnostičke obrade i dugoročnom praćenju bolesnica s fibromuskularnom displazijom, čime se omogućuje pravodobno liječenje i smanjenje dugoročnog kardiovaskularnog rizika.

LITERATURA:

1. Charles L, Triscott J, Dobbs B. Secondary hypertension: discovering the underlying cause. Am FamPhysician. 2017;96(7):453–461.
2. Countouris M, Mahmoud Z, Cohen JB, Crousillat D, Hameed AB. Hypertension in pregnancy and postpartum: current standards and opportunities to improve care. Am J ObstetGynecol. 2025;151(7):490–507.
3. Khoury MH, Gornik HL. Fibromuscular dysplasia. Vasc Med. 2017;22(3):248–252.
4. Williams B, Mancia G, Spiering W, Agabiti Rosei E, Azizi M, Burnier M, i dr. 2024 ESC guidelines for the management ofarterialhypertension. EurHeart J. 2024;45(38):3912–4018.
5. Poon LC, Nguyen-Hoang L, Smith GN, Bergman L, O'Brien P, i dr. Hypertensive disorders of pregnancy and long-term cardiovascular health: FIGO best practice advice. Int J GynecolObstet. 2023;160(Suppl 1):22–34.

Extended Abstract
Case report

Renovascular hypertension due to fibromuscular dysplasia in a young female patient - a case report

Nikolina Ivanac[1], Jasna Vučak[2]

1. Zadar County Health Center
2. Specialist Family Medicine Practice - Jasna vučak, Sukošan

Keywords: secondary hypertension; fibromuscular dysplasia; renovascular hypertension; family medicine; young woman
Correspondence address: Specijalistička ordinacija obiteljske medicine Jasna Vučak, 23206 Sukošan
E-mail: jnikolina2193@gmail.com
ORCID: Nikolina Ivanac: 0009-0007-1463-1494
Jasna Vučak:0000-0003-4328-531X

Introduction and aim. Secondary hypertension represents a smaller, but clinically highly significant proportion of arterial hypertension, particularly in younger populations. In young women, renovascular hypertension is often caused by fibromuscular dysplasia (FMD), a rare and frequently underdiagnosed condition. The aim of this case report is to emphasize the role of the family physician in the early recognition of secondary hypertension and timely referral for further diagnostic evaluation.

Case Report. A 33-year-old female patient presented with severely elevated blood pressure values (220/100 mmHg), detected during an occupational health examination. Her medical history included arterial hypertension from the 11th week of pregnancy and gestational diabetes, without the development of preeclampsia or other significant cardiovascular risk factors. Following evaluation by her family physician, antihypertensive therapy was initiated and the patient was referred for further workup due to suspected secondary hypertension. CT angiography revealed changes in the right renal artery suspicious for fibromuscular dysplasia (FMD). The diagnosis of multifocal FMD was confirmed by digital subtraction angiography (DSA). Percutaneous transluminal angioplasty (PTA) was performed, resulting in good blood pressure control with reduced antihypertensive therapy.

Discussion. FMD is a rare but important cause of secondary hypertension in young women and may remain unrecognized for a long time due to nonspecific clinical presentation and normal initial findings. Pathophysiologically, renal artery stenosis leads to renal hypoperfusion, activation of the renin–angiotensin–aldosterone system, and subsequent hypertension, usually of higher grade. Typical features suggestive of FMD include younger women (30–40 years), absence of other cardiovascular risk factors, resistant hypertension, and potential deterioration of renal function after initiation of ACE inhibitors or ARBs. Given the history of hypertension and diabetes during pregnancy, the patient should have been more closely monitored and evaluated earlier; however, the diagnosis was delayed until hypertension was incidentally detected during an occupational health examination. Severe hypertension at a young age and the onset of hypertension before the 20th week of pregnancy should raise suspicion of a secondary cause, warranting systematic diagnostic evaluation already at the level of primary health care.

Conclusion. The family physician plays a crucial role in the early recognition of secondary hypertension, coordination of diagnostic evaluation, and long-term follow-up of patients with fibromuscular dysplasia, enabling timely treatment and reduction of long-term cardiovascular risk.

REFERENCES:

1. Charles L, Triscott J, Dobbs B. Secondary hypertension: discovering the underlying cause. Am FamPhysician. 2017;96(7):453–461.
2. Countouris M, Mahmoud Z, Cohen JB, Crousillat D, Hameed AB. Hypertension in pregnancy and postpartum: current standards and opportunities to improve care. Am J ObstetGynecol. 2025;151(7):490–507.
3. Khoury MH, Gornik HL. Fibromuscular dysplasia. Vasc Med. 2017;22(3):248–252.
4. Williams B, Mancia G, Spiering W, Agabiti Rosei E, Azizi M, Burnier M, i dr. 2024 ESC guidelines for the management ofarterialhypertension. EurHeart J. 2024;45(38):3912–4018.
5. Poon LC, Nguyen-Hoang L, Smith GN, Bergman L, O'Brien P, i dr. Hypertensive disorders of pregnancy and long-term cardiovascular health: FIGO best practice advice. Int J GynecolObstet. 2023;160(Suppl 1):22–34.

Kad upala nije infekcija: prikaz slučaja kolangiokarcinoma prezentiranog Trousseauovim sindromom

Ana Pavić[1], Monika Ranogajec[1]

1. Dom zdravlja Zagreb Zapad

Ključne riječi: kolangiokarcinom, Trousseov sindrom, C-reaktivni protein
Adresa za dopisivanje: Ana Pavić, Petra Zrinskog 9, Zagreb, Hrvatska
E adresa: pavic.anapavic.ana@gmail.com
ORCID: Ana Pavić: 0009-0008-5678-8278
Monika Ranogajec: 0009-0007-0326-1184

Uvod s ciljem: Kolangiokarcinom je rijedak i agresivan tumor često tihog kliničkog karaktera sve do uznapredovalog stadija bolesti. Srednje je preživljenje kraće od 24 mjeseca. Prilikom istraživanja prognostičkih faktora preživljenja, statistički se značajnim izdvojio C-reaktivni protein (CRP) čija se koncentracija mijenja ovisno o infekciji, ozlijedi, ali i postojanju tumora. U studiji koju su proveli Gerhardt i sur. pacijenti s CRP-om > 12 mg/L u trenutku postavljanja dijagnoze imali su značajno kraće preživljenje od pacijenata s nižim CRP-om. Kolangiokarcinom se povezuje s brojnim paraneoplastičnim sindromima. Cilj je ovog slučaja prikazati kako maligna bolest može oponašati infektivni proces u pacijentice s Trousseauovim sindromom. Trousseauov sindrom definira se kao neobjašnjeni tromboembolijski događaji koji prethode ili prate dijagnozu visceralnog maligniteta. Iako čest u pacijenata s gastrointestinalnim neoplazmama, u dostupnoj je literaturi rijetko zabilježen u pacijenata s kolangiokarcinomom.

Prikaz slučaja: Osamdesettrogodišnja pacijentica inicijalno razvija tromboflebitis desne potkoljenice. Dva tjedna kasnije javlja se zbog bolova u lijevom ramenu i hemitoraksu bez respiratornih simptoma. Bolovi su oštrog karaktera, kontinuirani i jači pri udahu. Laboratorijski se ističe povišeni CRP (121,6 mg/L) i alterirani hepatogram (GGT 214 U/L, ALP 307 U/L, ALT 64 U/ L). Dva mjeseca ranije hepatogram je unutar referentnih vrijednosti. Radiološki se postavi sumnja na formiranje upalne infiltracije u linguli te se uvede levofloksacin. Četiri dana kasnije pacijentica se predstavlja s povećanjem opsega lijeve potkoljenice za 2 cm, porastom CRP-a (150,4 mg/L) i hepatograma (GGT 299 U/L, ALP 339 U/L, ALT 66 U/L, AST 86 U/L) uz patološki urin. Urinokultura je pokazala rast fiziološke flore. Ultrazvučno se potvrdi duboka venska tromboza stražnje tibijalne vene i uvede rivaroksaban. Zbog daljnjeg porasta CRP-a (187,5 mg/L) primijeni se intravenski ceftriakson i peroralno uvede cefuroksim. Nakon dva dana CRP pada (100,8 mg/L), no unatoč širokoj antibiotskoj terapiji deset dana kasnije iznosi 81,5 mg/L. Zbog nerazjašnjeno perzistentno povišenog CRP-a učini se kompjuterizirana tomografija toraksa, abdomena i zdjelice kojom se utvrde sekundarizmi plućnog parenhima, opsežni sekundarizmi jetre te peritonealna diseminacija bez jasno vidljivog primarnog sijela bolesti. S obzirom na postojanje diseminirane bolesti nepoznatog primarnog sijela, pacijentica se hospitalizira i učini se dodatna endoskopska obrada. Gastroskopijom se utvrdi promijenjen bulbus dvanaesnika, bioptira se uzorak i patohistološkom analizom bioptata opiše kolangiokarcinom. Dvadeseti dan hospitalizacije pacijentica umire pod kliničkom slikom gašenja vitalnih funkcija.

Rasprava: Ovaj slučaj prikazuje kako uznapredovala maligna bolest može oponašati infektivni proces. Pleuritička bol u lijevom ramenu uz radiološki opisan konsolidat u linguli i povišeni CRP podupirali su dijagnozu upale pluća. Radna dijagnoza reevaluirana je zbog progresivne elevacije jetrenih enzima, rekurentnih tromboembolijskih događaja, izostanka respiratornih simptoma uz izostanak normalizacije CRP-a usprkos trojnoj antibiotskoj terapiji. Trousseauov se sindrom manifestirao trombozom površinske vene praćenom trombozom duboke vene u kratkom vremenskom razmaku prethodno postavljanju dijagnoze kolangiokarcinoma. Perzistentno povišen CRP u odsutnosti dokazane infekcije može odražavati tumorski induciranu sistemsku upalu i povezan je s lošijom prognozom.

Zaključak: Perzistentno povišeni upalni parametri uz tromboembolijske događaje zahtijevaju evaluaciju postojanja maligne bolesti, naročito u starijih pacijenata.

LITERATURA:

1. Blechacz, Boris, Mina Komuta, Tania Roskams, and Gregory J. Gores. “Clinical Diagnosis and Staging of Cholangiocarcinoma.” Nature Reviews Gastroenterology & Hepatology 8, no. 9 (2011): 512–22. https://doi.org/10.1038/ nrgastro.2011.131.
2. Gerhardt, Thomas. “C-Reactive Protein Is a Prognostic Indicator in Patients with Perihilar Cholangiocarcinoma.” World Journal of Gastroenterology 12, no. 34 (2006): 5495. https://doi.org/10.3748/wjg.v12.i34.5495.
3. Rahman, Saad Ur, Muhammad Khawar Sana, Zabreen Tahir, Aamir Ali, and Pir Ahmad Shah. “Paraneoplastic Syndromes in Cholangiocarcinoma.” World Journal of Hepatology 12, no. 11 (2020): 897–907. https://doi.org/10.4254/wjh.v12.i11.897.
4. Blum, M. F., V. Y. Ma, A. M. Betbadal, R. A. Bonomo, R. R. Raju, and C. D. Packer. “Trousseaus Syndrome in Cholangiocarcinoma: The Risk of Making the Diagnosis.” Clinical Medicine & Research 14, no. 1 (2016): 53–59. https:// doi.org/10.3121/cmr.2015.1304.

Extended Abstract
Case report

Beyond Infection: Cholangiocarcinoma Presenting with Trousseau's Syndrome

Ana Pavić[1], Monika Ranogajec[1]

1. Health center Zagreb West

Keywords: Cholangiocarcinoma, Trousseau's syndrome, C-reactive protein
Correspondence address: Ana Pavić, Petra Zrinskog 9, Zagreb, Hrvatska
E-mail: pavic.anapavic.ana@gmail.com
ORCID: Ana Pavić: 0009-0008-5678-8278
Monika Ranogajec: 0009-0007-0326-1184

Introduction with aim: Cholangiocarcinoma is a rare and aggressive malignancy that often remains clinically silent until advanced stages of disease. Median survival is shorter than 24 months. C- reactive protein (CRP) has been identified as a statistically significant prognostic factor. In a study by Gerhardt et al., patients with CRP levels > 12 mg/L at the time of diagnosis had significantly shorter survival than those with lower levels. Cholangiocarcinoma is also associated with various paraneoplastic syndromes. This case report illustrates how malignancy may mimic an infectious process in a patient with Trousseau's syndrome. Trousseau's syndrome is defined as unexplained thromboembolic events that precede or accompany the diagnosis of visceral malignancy. While commonly associated with gastrointestinal cancers, it is rarely reported in cholangiocarcinoma.

Case Presentation: An 83-year-old woman initially developed thrombophlebitis of the right lower leg. Two weeks later, she presented with pleuritic pain in the left shoulder and hemithorax without respiratory symptoms. Laboratory tests showed elevated CRP (121.6 mg/L) and abnormal liver enzymes (GGT 214 U/L, ALP 307 U/L, ALT 64 U/L). Liver function tests had been normal two months earlier. Chest imaging suggested inflammatory infiltration in the lingula, and levofloxacin therapy was initiated. Four days later, the patient returned with a 2-cm increase in the circumference of the left lower leg, rising CRP (150.4 mg/L), and further deterioration of liver enzymes (GGT 299 U/L, ALP 339 U/L, ALT 66 U/L, AST 86 U/L). Urinalysis was abnormal, but urine culture showed only normal flora. Doppler ultrasonography confirmed deep vein thrombosis of the posterior tibial vein, and rivaroxaban was started. CRP continued to rise to 187.5 mg/L, prompting the initiation of ceftriaxone and cefuroxime. Although CRP temporarily decreased to 100.8 mg/L in two days, it remained elevated at 81.5 mg/L after ten days of cefuroxime. Due to persistently elevated CRP despite broad-spectrum antibiotic therapy, computed tomography of the chest, abdomen, and pelvis was performed. Imaging revealed pulmonary parenchymal metastases, extensive liver metastases, and peritoneal dissemination without an identifiable primary tumor. The patient was hospitalized for further evaluation. Gastroscopy revealed abnormal changes in the duodenal bulb; histopathological analysis of biopsy specimens confirmed cholangiocarcinoma. On the twentieth day of hospitalization, the patient died due to progressive failure of vital functions.

Discussion: This case demonstrates how advanced malignancy can resemble an infectious process. Pleuritic pain, radiological lung consolidation, and markedly elevated CRP initially supported the diagnosis of pneumonia. Reevaluation was prompted by progressive liver enzyme abnormalities, recurrent thromboembolic events, absence of respiratory symptoms, and unresolved CRP despite multiple antibiotic regimens. Trousseau's syndrome manifested as thrombosis of a superficial vein followed by deep vein thrombosis within a short time interval preceding the diagnosis of cholangiocarcinoma. Persistently elevated CRP in the absence of proven infection likely reflected tumor-induced systemic inflammation and was associated with poor prognosis.

Conclusion: Persistently elevated inflammatory markers combined with thromboembolic events should prompt evaluation for underlying malignancy, particularly in elderly patients.

REFERENCES:

1. Blechacz, Boris, Mina Komuta, Tania Roskams, and Gregory J. Gores. "Clinical Diagnosis and Staging of Cholangiocarcinoma." Nature Reviews Gastroenterology & Hepatology 8, no. 9 (2011): 512–22. https://doi.org/10.1038/ nrgastro.2011.131.
2. Gerhardt, Thomas. "C-Reactive Protein Is a Prognostic Indicator in Patients with Perihilar Cholangiocarcinoma." World Journal of Gastroenterology 12, no. 34 (2006): 5495. https://doi.org/10.3748/wjg.v12.i34.5495.
3. Rahman, Saad Ur, Muhammad Khawar Sana, Zabreen Tahir, Aamir Ali, and Pir Ahmad Shah. "Paraneoplastic Syndromes in Cholangiocarcinoma." World Journal of Hepatology 12, no. 11 (2020): 897–907. https://doi.org/10.4254/wjh.v12.i11.897.
4. Blum, M. F., V. Y. Ma, A. M. Betbadal, R. A. Bonomo, R. R. Raju, and C. D. Packer. "Trousseaus Syndrome in Cholangiocarcinoma: The Risk of Making the Diagnosis." Clinical Medicine & Research 14, no. 1 (2016): 53–59. https:// doi.org/10.3121/cmr.2015.1304.

Bol u koljenu kao inicijalni simptom hematološke bolesti

Nika Špoljarić[1], Ksenija Kranjčević[1,2]

1. Specijalistička ordinacija obiteljske medicine dr.sc. Ksenija Kranjčević
2. Katedra za obiteljsku medicinu Škola narodnog zdravlja Andrija Štampar, Medicinski fakultet Sveučilišta u Zagrebu

Ključne riječi: bol u koljenu, pancitopenija, akutna leukemija
Adresa za dopisivanje: Ujevićeva ulica 17c, 10000, Zagreb
E adresa: nikson0912@gmail.com
ORCID: Nika Špoljarić: 0009-0006-4062-039
Ksenija Kranjčević: 0000-0001-6528-8357

Uvod s ciljem: Bol u koljenu čest je razlog dolaska pacijenata u ordinaciju obiteljske medicine. Iako je najčešće benigne etiologije, povezana s degenerativnim ili upalnim promjenama, ponekad može predstavljati prvi simptom ozbiljne sistemske bolesti. Cilj ovog rada je naglasiti važnost sveobuhvatnog pristupa bolesniku koji se prezentiraju nespecifičnim simptomima.

Prikaz slučaja: Pacijent, 74 godine, javlja se u ambulantu obiteljske medicine zbog boli u lijevom koljenu unazad mjesec dana i kožne promjene na licu u vidu furunkula u području brade, nakon brijanja. Bol u koljenu je intenzivnija pri opterećenju, negira nedavnu traumu, nije uzeo ništa protiv bolova. Iz zdravstvenog kartona vidljivo je da boluje od hipertenzije, dislipidemije i benigne hiperplazije prostate, a u redovnoj terapiji koristi amlodipin 5 mg, ramipril 10 mg, hidroklorotiazid 25 mg, rosuvastatin 5 mg i tamsulozin 0.4 mg. Kliničkim pregledom utvrđena bolnost medijalne zglobne pukotine uz minimalnu oteklinu i eutermnost. Fleksija je bila ograničena, dok je ekstenzija bila urednog opsega te bezbolna. U terapiju je uveden meloksikam 15 mg kroz 10 dana, a zbog furunkula brade klindamicin 600 mg 2x1 uz kontrolu u ambulanti. Nekoliko dana kasnije, bolesnik se telefonski javlja zbog povišene temperature unazad četiri dana i osjećaja slabosti. Navodi da su mu unuke nedavno preboljele gripu. Kućni test za gripu i COVID bio je negativan. Uputi ga se učiniti laboratorijsku analizu krvi te da se javi na pregled u ambulantu. Pristigli laboratorijski nalazi pokazali su izraženu pancitopeniju (leukociti $1,8\times10^9$/L, eritrociti $2,96\times10^{12}$/L, hemoglobin 105 g/L, hematokrit 0,294 L/L, trombociti 50×10^9/L) uz povišenu sedimentaciju eritrocita (SE 85 mm / 3,6 ks) zbog čega je pacijent upućen na pregled i obradu kroz objedinjeni hitni bolnički prijem, uz planirani pregled hematologa. Na objedinjenom hitnom prijemu stanje je shvaćeno kao moguća imunokompromitacija zbog recentnog izlaganja virusu gripe ili nuspojava klindamicina te je preporučeno profilaktičko uzimanje oseltamivira 75 mg kroz deset dana uz dogovoren pregled hematologa. Tjedan dana kasnije, hematolog postavlja dijagnozu pancitopenije gradusa 2-3 te uzima uzorke za mijelogram, protočnu citometriju, citogenetiku i molekularnu dijagnostiku. Nekoliko dana nakon uzorkovanja, pacijent je hitno pozvan na bolničko liječenje s obzirom na to da su pristigli nalazi ukazivali na akutnu leukemiju te je započeto liječenje kemoterapijom.

Rasprava: Pancitopenija predstavlja alarmantan laboratorijski nalaz koji upućuje na poremećaj funkcije koštane srži. Epizoda groznice, povišena sedimentacija eritrocita te istodobno sniženje vrijednosti svih triju krvnih loza zahtijevaju hitno isključenje hematoloških malignih bolesti. Iako je bolesnik bio izložen infektivnoj bolesti koja može uzrokovati pancitopeniju zbog prolazne imunosupresije koštane srži i sistemskog odgovora, težina i opseg nalaza upućuju na potrebu daljnje specijalističke obrade. Isto tako poznato je da pojedini lijekovi poput antibiotika i nesteroidnih antireumatika mogu dovesti do prolazne pancitopenije te je potrebna dobra klinička procjena pri njihovoj primjeni.

Zaključak: Ovaj prikaz slučaja naglašava važnost sveobuhvatnog pristupa bolesniku u obiteljskoj medicini. Dugotrajna bol u lokomotornom sustavu, osobito kada je praćena sistemskim simptomima i patološkim laboratorijskim nalazima može biti prvi znak teške hematološke bolesti. Liječnik obiteljske medicine ima ključnu ulogu u ranom prepoznavanju takvih stanja i pravodobnom upućivanju pacijenta.

LITERATURA:

1. Shimony S, Stahl M, Stone RM. Acute myeloid leukemia: 2025 Update on Diagnosis, Risk-Stratification, and Management. Am J Hematol. 2025 May;100(5):860–891.
2. Slouma M, Hannech E, Ghedira H, Dhahri R, Khrifech Y, Doghri R, Gharsallah I. Osteoarticular manifestation of acute lymphoblastic leukemia in adults: a literature review. Clin Rheumatol. 2023 Feb;42(2):607–620.
3. Karisik E, Stanojevic-Ristic Z, Jevtic M, Rasic J, Maric M, Popovic M. Ceftriaxone-Induced Pancytopenia: A Case Report. Hematol Rep. 2025 Jun 12;17(3):30.

Extended Abstract
Case report

Knee Pain as an Initial Symptom of a Hematological Disease

Nika Špoljarić[1], Ksenija Kranjčević[1,2]

1. Specialist Family Medicine Practice, PhD Ksenija Kranjčević
2. Department of Family Medicine, Andrija Štampar School of Public Health, Faculty of Medicine, University of Zagreb

Keywords: knee pain, pancytopenia, acute leukemia
Correspondence address: Ujevićeva ulica 17c, 10000, Zagreb
E-mail: nikson0912@gmail.com
ORCID: Nika Špoljarić: 0009-0006-4062-039
Ksenija Kranjčević: 0000-0001-6528-8357

Introduction with Aim: Knee pain is a common reason for patients to visit a family medicine practice. Although it is most often of benign etiology, associated with degenerative or inflammatory changes, it can sometimes represent the first symptom of a serious systemic disease. The aim of this paper is to emphasize the importance of a comprehensive approach to patients presenting with nonspecific symptoms.

Case Presentation: A 74-year-old patient presented to a family medicine clinic due to pain in the left knee lasting for one month and a skin lesion on the face in the form of a furuncle in the chin area after shaving. The knee pain was more intense with weight-bearing; the patient denied recent trauma and had not taken any analgesics. Medical records revealed a history of hypertension, dyslipidemia, and benign prostatic hyperplasia. His regular therapy included amlodipine 5 mg, ramipril 10 mg, hydrochlorothiazide 25 mg, rosuvastatin 5 mg, and tamsulosin 0.4 mg. Clinical examination showed tenderness of the medial joint line with minimal swelling and normal skin temperature. Flexion was limited, while extension was of normal range and painless. Meloxicam 15 mg for 10 days was introduced, and due to the chin furuncle, clindamycin 600 mg twice daily was prescribed, with follow-up planned. Several days later, the patient contacted the clinic by telephone because of elevated body temperature over the previous four days and a feeling of weakness. He reported that his granddaughters had recently recovered from influenza. A home test for influenza and COVID-19 was negative. He was advised to undergo laboratory blood tests and to come for an examination at the clinic. The laboratory results showed marked pancytopenia (leukocytes 1.8×10^9/L, erythrocytes 2.96×10^{12}/L, hemoglobin 105 g/L, hematocrit 0.294 L/L, platelets 50×10^9/L) with an elevated erythrocyte sedimentation rate (ESR 85 mm / 3.6 ks), and the patient was referred for evaluation through the integrated emergency hospital admission unit, with a planned hematology consultation. At the emergency admission unit, the condition was interpreted as possible immunocompromise due to recent exposure to influenza virus or as a side effect of clindamycin, and prophylactic oseltamivir 75 mg for ten days was recommended, with a hematology appointment arranged. One week later, the hematologist diagnosed grade 2–3 pancytopenia and obtained samples for myelogram, flow cytometry, cytogenetic, and molecular diagnostics. A few days after sampling, the patient was urgently called for hospital treatment as the results indicated acute leukemia, and chemotherapy was initiated.

Discussion: Pancytopenia is an alarming laboratory finding indicating impaired bone marrow function. An episode of fever, elevated erythrocyte sedimentation rate, and simultaneous reduction of all three blood cell lines require urgent exclusion of hematologic malignancies. Although the patient had been exposed to an infectious disease that can cause pancytopenia due to transient bone marrow immunosuppression and systemic response, the severity and extent of the findings indicated the need for further specialist evaluation. It is also known that certain drugs, such as antibiotics and nonsteroidal anti-inflammatory drugs, can lead to transient pancytopenia, which requires careful clinical assessment when prescribing them.

Conclusion: This case report highlights the importance of a comprehensive approach to patients in family medicine. Prolonged musculoskeletal pain, especially when accompanied by systemic symptoms and pathological laboratory findings, may be the first sign of a severe hematologic disease. The family physician plays a key role in the early recognition of such conditions and in the timely referral of patients.

REFERENCES:

1. Shimony S, Stahl M, Stone RM. Acute myeloid leukemia: 2025 Update on Diagnosis, Risk-Stratification, and Management. Am J Hematol. 2025 May;100(5):860–891.
2. Slouma M, Hannech E, Ghedira H, Dhahri R, Khrifech Y, Doghri R, Gharsallah I. Osteoarticular manifestation of acute lymphoblastic leukemia in adults: a literature review. Clin Rheumatol. 2023 Feb;42(2):607–620.
3. Karisik E, Stanojevic-Ristic Z, Jevtic M, Rasic J, Maric M, Popovic M. Ceftriaxone-Induced Pancytopenia: A Case Report. Hematol Rep. 2025 Jun 12;17(3):30.

Karcinom prostate u 48-godišnjeg muškarca

Iva Zadro[1]

1. Dom zdravlja Zagreb Istok

Ključne riječi: karcinom prostate, muškarac srednje dobi, obiteljska medicina
Adresa za dopisivanje: Iva Zadro, Badelov brijeg 29, Sesvete, Hrvatska
E adresa: iva.zadro123@gmail.com
ORCID: 0009-0001-3368-4272

Uvod s ciljem: Karcinom prostate je jedna od najčešćih malignih bolesti muškaraca te se pretežito javlja u bolesnika starijih od 60 godina. U ranoj fazi bolesti simptomi često izostaju ili su nespecifični te nalikuju simptomima drugih bolesti prostate, poput otežanog ili učestalog mokrenja i hematurije. Zbog toga atipična klinička prezentacija karcinoma prostate predstavlja dijagnostički izazov u svakodnevnoj kliničkoj praksi. Cilj ovog rada jest naglasiti važnost odgovarajuće dijagnostičke obrade s ciljem isključenja maligniteta u bolesnika iz dobnih skupina u kojima se takve dijagnoze rijetko susreću.

Prikaz slučaja: Muškarac u dobi od 48 godina javio se u ambulantu obiteljske medicine zbog boli u području desne prepone u trajanju od četiri dana. Radio je kao prodavač u autosalonu, a obiteljska anamneza za maligne bolesti je negativna. Nije pušio niti konzumirao alkohol. Od kroničnih stanja bila je prisutna arterijska hipertenzija, uz redovitu terapiju fiksnom kombincijom amlodipina, perindoprila i indapamida. Bol je opisao kontinuiranom i tupom, bez jasno provocirajućeg čimbenika. Mokrenje i stolica bili su uredni, a pacijent afebrilan. Kliničkim pregledom abdomen je bio mekan i bezbolan na palpaciju, bez organomegalija, znakova peritonealne iritacije i prisutnosti ingvinalne kile. Iste simptome imao je i četiri mjeseca ranije kada se javio u hitnu kiruršku službu. Tada je temeljem laboratorijskh nalaza krvi i urina te ultrazvučnog pregleda abdomena isključeno hitno kirurško stanje, uz savjetovanje poštede od pojačanog tjelesnog napora. Nakon toga se pacijent nije obratio obiteljskom liječniku. Obzirom na sve navedeno liječnik obiteljske medicine posumnjao je da bi se kod pacijenta moglo raditi o kroničnom prostatitisu te ga uputio na određivanje krvne slike i urina uključujući i prostata-specifični antigen (PSA). Pristigli nalazi bili su unutar referentnih vrijednosti osim blago povišenog PSA (3,79 µg/L) pa je pacijent bio upućen na urološki pregled. Zbog sumnje na malignu bolest urolog je indicirao daljnju slikovnu obradu. Magnetskom rezonancijom prostate prikazana je lezija smještena u desnoj perifernoj zoni s ekstrakapsularnim širenjem i zahvaćanjem desnog sjemenog mjehurića uz metastatsku zahvaćenost zdjeličnih kostiju i limfnih čvorova. Biopsijom prostate potvrđen je adenokarcinom prostate Gleasonova zbroja (4+4). Pacijent je bio dobrog općeg stanja te mu je, temeljem onkološke procjene, indicirano liječenje kombinacijom androgen-deprivacijske terapije i kemoterapije.

Rasprava: U Hrvatskoj je 2024. godine počela provedba Posebnog programa za probir i rano otkrivanje raka prostate, usmjerenog na muškarce životne dobi od 55 do 69 godina. Iako pacijent u prikazanom slučaju ne pripada dobnoj skupini obuhvaćenoj nacionalnim programom probira, približno 6% novodijagnosticiranih slučajeva karcinoma prostate javlja se u muškaraca mlađih od 55 godina. Stoga je potrebno razmišljati o mogućoj malignoj bolesti i u toj populaciji, osobito kod nespecifične simptomatologije.

Zaključak: Karcinom prostate može se javiti i u muškaraca srednje životne dobi, pri čemu se simptomi nerijetko prezentiraju nespecifično i mogu upućivati na širok spektar diferencijalnih dijagnoza. Liječnik obiteljske medicine ima ključnu ulogu u cjelovitoj procjeni bolesnika i pravodobnom prepoznavanju bolesti unatoč nespecifičnoj kliničkoj slici.

LITERATURA:

1. National Cancer Institute, „Cancer Stat Facts: Prostate Cancer“, Surveillance, Epidemiology, and End Results (SEER) Program. Dostupno na: https://seer.cancer.gov/statfacts/html/prost.html. [pristupljeno 31. siječnja 2026.]
2. Ministarstvo zdravstva Republike Hrvatske, „Posebni program za probir i rano otkrivanje raka prostate“, Hrvatski zavod za javno zdravstvo (HZJZ), Zagreb, 2024. Dostupno na: https://www.hzjz.hr. [pristupljeno 31. siječnja 2026.]
3. European Association of Urology, „EAU Guidelines on Prostate Cancer“. Dostupno na: https://uroweb.org/guidelines/prostate-cancer. [pristupljeno 31. siječnja 2026.]

Extended Abstract
Case report

Prostate cancer in a 48-year-old man

Iva Zadro[1]

1. Health Center Zagreb East

Keywords: prostate cancer, middle-aged man, family medicine
Correspondence address: Iva Zadro, Badelov brijeg 29, Sesvete, Hrvatska
E-mail: iva.zadro123@gmail.com
ORCID: 0009-0001-3368-4272

Introduction with aim: Prostate cancer is one of the most common malignant diseases in men and predominantly occurs in patients older than 60 years. In the early stages of the disease, symptoms are often absent or nonspecific and may mimic symptoms of other prostatic conditions, such as difficulty with urination, increased urinary frequency, or hematuria. Consequently, an atypical clinical presentations of prostate cancer represent a diagnostic challenge in everyday clinical practice. The aim of this paper is to emphasize the importance of considering and appropriately evaluating possible malignancy in patients from age groups in which prostate cancer is uncommon.

Case report: A 48-year-old man presented to a family physician's office with pain in the right inguinal region lasting four days. He was employed as a car salesman, and his family history was negative for malignant disease. He was a non-smoker and he did not consume alcohol. His medical history was significant for arterial hypertension, treated regularly with a fixed-dose combination of amlodipine, perindopril, and indapamide. The pain was described as continuous and dull, without a clear provoking factor. Urination and bowel habits were normal, and the patient was afebrile. On clinical examination, the abdomen was soft and non-tender on palpation, without organomegaly, signs of peritoneal irritation, or inguinal hernia. The patient reported having experienced similar symptoms four months earlier, when he presented to the emergency surgical department. At that time, acute surgical pathology was excluded based on laboratory blood and urine tests and abdominal ultrasound. He was advised to avoid strenuous physical activity. After that episode, the patient did not seek further follow-up with his family physician. Based on the overall clinical picture, the family physician suspected chronic prostatitis and referred the patient for laboratory evaluation, including complete blood count, urinalysis, and prostate-specific antigen (PSA) testing. The results were within reference ranges except for a mildly elevated PSA level (3.79 µg/L), prompting referral for urological evaluation and further diagnostic workup. Due to suspicion of malignancy, the urologist indicated further imaging evaluation. Magnetic resonance imaging of the prostate revealed a lesion located in the right peripheral zone with extracapsular extension and involvement of the right seminal vesicle, along with metastatic involvement of pelvic bones and lymph nodes. Prostate biopsy confirmed adenocarcinoma of the prostate with a Gleason score of (4+4). The patient was in good general condition, and based on oncological assessment, treatment with combined androgen deprivation therapy and chemotherapy was indicated.

Discussion: In Croatia, the implementation of a Special national program for prostate cancer screening and early detection began in 2024, targeting men aged 55 to 69 years. Although the patient presented in this case does not belong to the age group covered by the national screening program, approximately 6% of newly diagnosed cases occur in men younger than 55 years. Therefore, the possibility of malignancy should also be considered in this population, particularly in the presence of nonspecific symptoms.

Conclusion: Prostate cancer can also occur in middle-aged men, in whom symptoms are often nonspecific and may point to a wide range of differential diagnoses. The family physician plays a key role in the comprehensive assessment of patients and in the timely recognition of the disease in the setting of a nonspecific clinical presentation.

REFERENCES:

1. National Cancer Institute, „Cancer Stat Facts: Prostate Cancer“, Surveillance, Epidemiology, and End Results (SEER) Program. Dostupno na: https://seer.cancer.gov/statfacts/html/prost.html. [pristupljeno 31. siječnja 2026.]
2. Ministarstvo zdravstva Republike Hrvatske, „Posebni program za probir i rano otkrivanje raka prostate“, Hrvatski zavod za javno zdravstvo (HZJZ), Zagreb, 2024. Dostupno na: https://www.hzjz.hr. [pristupljeno 31. siječnja 2026.]
3. European Association of Urology, „EAU Guidelines on Prostate Cancer“. Dostupno na: https://uroweb.org/guidelines/prostate-cancer. [pristupljeno 31. siječnja 2026.]

Seksualno prenosive infekcije i virus humane imunodeficijencije u praksi primarne zdravstvene zaštite - Serija Slučajeva

Vladimir Zorić[1], Hristina Leskaroska[2]

1. Privatna zdravstvena ustanova "Sv. Elena", Poliklinika primarnog nivoa, Skoplje, Sjeverna Makedonija
2. Privatna zdravstvena ustanova Dr. Hristina, Ordinacija opće prakse, Skoplje, Sjeverna Makedonija

Ključne riječi: HIV, spolno prenosive bolesti, antiretrovirusna terapija
E adresa: vladimirzoric@gmail.com
ORCID: Vladimir Zorić: 0009-0005-2163-9692
Hristina Leskaroska: 0000-0001-5954-9151

Uvod s ciljem: Porast učestalosti seksualno prenosivih infekcija (SPI) povećao je potrebu za obrazovanjem i kliničkom kompetencijom među liječnicima primarne zdravstvene zaštite. Liječnici obiteljske medicine igraju ključnu ulogu u prevenciji virusa humane imunodeficijencije (HIV), kao i u dijagnostici i liječenju SPI. Promjene seksualnog ponašanja, široka primjena antiretrovirusne terapije (ART) i uvođenje HIV pre-ekspozicijske profilakse (PrEP) doprinijeli su evoluciji epidemiologije SPI i novim izazovima u primarnoj zdravstvenoj zaštiti. Cilj ovog rada je istaknuti ulogu liječnika obiteljske medicine u prepoznavanju, dijagnostici i liječenju spolno prenosivih bolesti kod pacijenata koji primaju prevenciju HIV-a ili ART tretman kroz seriju slučajeva temeljenu na primarnoj zdravstvenoj zaštiti.

Prikaz slučaja: Prikazujemo tri slučaja zabilježena u praksi primarne zdravstvene zaštite:

Slučaj 1: 41-godišnji muškarac koji ima spolne odnose s muškarcima (MSM), koji prima PrEP, s indeksom tjelesne mase od 27 kg/m², nepušač i povremeno koristi alkohol i chemsex, dijagnosticirana mu je sifilis na temelju kliničkih nalaza i seroloških testova. Uspješno je liječen odgovarajućom antibioticima.

Slučaj 2: 39-godišnji muškarac koji ima spolne odnose s muškarcima (MSM) i prima PrEP, s povremenim korištenjem doksiciklina kao postekspozicijske profilakse (Doxy-PEP) i sudjelovanjem u kemsex praksama, javio se zbog uretralnog iscjetka i disurije. Dijagnosticirana je gonoreja. Početno liječenje cefalosporinom bilo je neučinkovito, ali naknadna terapija makrolidima dovela je do kliničkog rješavanja simptoma.

Slučaj 3: 39-godišnji muškarac koji živi s HIV-om i prima redovitu antiretrovirusnu terapiju predstavio se s ovalnim, hiperemičnim lezijom penisa povezanim s bezbolnim induriranim čirevom. Mikrobiološkim testiranjem potvrđena je infekcija Treponema pallidum, a pacijent je uspješno liječen antibiotskom terapijom.

Rasprava: Ovi slučajevi ilustriraju sve veću složenost prikaza spolno prenosivih infekcija u primarnoj zdravstvenoj zaštiti, posebno među ključnim populacijama kao što su muškarci koji imaju spolne odnose s muškarcima (MSM), osobe koje koriste PrEP i osobe koje žive s HIV-om. Obiteljski liječnici često su prva kontaktna točka i moraju biti opremljeni za prepoznavanje simptoma, pokretanje odgovarajućih dijagnostičkih testova, upravljanje liječenjem te koordinaciju skrbi sa specijalističkim službama. Učinkovito upravljanje spolno prenosivim infekcijama kod osoba koje žive s HIV-om ili su u riziku od njega zahtijeva multidisciplinarnu suradnju i strategije za podršku pridržavanju liječenja i prevenciji.

Zaključak: Liječnici obiteljske medicine igraju ključnu ulogu u odgovoru zdravstvenog sustava na HIV i spolno prenosive bolesti (SPB). Rana prepoznatljivost, točna dijagnoza i pravovremeno liječenje u primarnoj skrbi od presudne su važnosti za sprječavanje komplikacija, smanjenje prijenosa i pružanje sveobuhvatne, pacijentom usmjerene skrbi. Jačanje obrazovanja i kliničkih vještina u području spolnog zdravlja ključno je za odgovor na evoluciju krajolika SPB-a.

LITERATURA:

1. EACS – Europsko AIDS kliničko društvo, https://www.eacsociety.org/guidelines/eacs-guidelines/
2. Ambrosioni J, Levi LI, Alagaratnam J, Sempere A, Mastrangelo A, Paioni P, Mussini C, Marzolini C, Nielsen SD, Béguelin C, Welch S, Koval A, Mendao L, Bamford A, Calmy A, Guaraldi G, Oprea C, Martínez E, Rockstroh JK; Upravni odbor EACS-a. Glavna revizija verzija 13.0 smjernica Europskog AIDS kliničkog društva za 2025. HIV Med. siječanj 2026; 27(1):18-32. DOI: 10.1111/HIV.70120. Epub 2025 15. listopada. PMID: 41088922; PMCID: PMC12757896.
3. Institut za javno zdravstvo Sjeverne Makedonije, Odjel za prevenciju i kontrolu zaraznih bolesti, unutar Odjela za epidemiologiju zaraznih bolesti, Godišnja izvješća o zaraznim bolestima Instituta za javno zdravstvo Sjeverne Makedonije, https://www.iph.mk/en/home/oddelenie/22

Extended Abstract
Case report

Sexually transmitted infections and human immunodeficiency virus in primary care practice - A case series

Vladimir Zorić[1], Hristina Leskaroska[2]

1. Private Health Institution “St. Elena” General Practice Office, Skopje, N. Macedonia
2. Private Health Institution Dr. Hristina, General Practice Office, Skopje, N. Macedonia

Keywords: prostate cancer, middle-aged man, family medicine
Correspondence address: Iva Zadro, Badelov brijeg 29, Sesvete, Hrvatska
E-mail: iva.zadro123@gmail.com
ORCID: 0009-0001-3368-4272

Introduction with aim: The rising incidence of sexually transmitted infections (STIs) has increased the need for education and clinical competence among primary health care physicians. Family medicine physicians play a central role in prevention of human immunodeficiency virus (HIV), as well as in the diagnosis and management of STIs. Changing sexual behaviors, the widespread use of antiretroviral therapy (ART), and the introduction of HIV pre-exposure prophylaxis (PrEP) have contributed to evolving STIs epidemiology and new challenges in primary care. The aim of this paper is to highlight the role of family medicine physicians in the recognition, diagnosis and management of STIs in patients receiving HIV prevention or ART treatment through a primary care–based case series.

Case presentation: We present three cases encountered in primary health care practice:

Case 1: A 41-year-old man who has sex with men (MSM), receiving PrEP, with a body mass index of 27 kg/m², non-smoker and occasional alcohol and chemsex use, was diagnosed with syphilis based on clinical findings and serological testing. He was successfully treated with appropriate antibiotic therapy.

Case 2: A 39-year-old MSM receiving PrEP, with intermittent use of doxycycline post-exposure prophylaxis (Doxy-PEP) and chemsex practices, presented with urethral discharge and dysuria. Gonorrhea was diagnosed. Initial treatment with a cephalosporin was ineffective, but subsequent macrolide therapy led to clinical resolution.

Case 3: A 39-year-old man living with HIV and receiving regular ART presented with an oval, hyperemic penile lesion associated with a painless indurated ulcer. Microbiological testing confirmed Treponema pallidum infection and the patient was successfully treated with antibiotic therapy.

Discussion: These cases illustrate the increasing complexity of STIs presentation in primary care, particularly among key populations such as MSM, individuals using PrEP, and people living with HIV. Family physicians are often the first point of contact and must be equipped to recognize symptoms, initiate appropriate diagnostic testing, manage treatment and coordinate care with specialist services. Effective STI management in people living with or at risk for HIV requires multidisciplinary collaboration and strategies to support adherence and prevention.

Conclusion: Family medicine physicians play a crucial role in the health systems response to HIV and STIs. Early recognition, accurate diagnosis and timely treatment in primary care are essential to prevent complications, reduce transmission and provide comprehensive, patient-centred care. Strengthening education and clinical skills in sexual health is key to addressing the evolving STIs landscape.

REFERENCES:

1. EACS – Europsko AIDS kliničko društvo, https://www.eacsociety.org/guidelines/eacs-guidelines/
2. Ambrosioni J, Levi LI, Alagaratnam J, Sempere A, Mastrangelo A, Paioni P, Mussini C, Marzolini C, Nielsen SD, Béguelin C, Welch S, Koval A, Mendao L, Bamford A, Calmy A, Guaraldi G, Oprea C, Martínez E, Rockstroh JK; Upravni odbor EACS-a. Glavna revizija verzija 13.0 smjernica Europskog AIDS kliničkog društva za 2025. HIV Med. siječanj 2026; 27(1):18-32. DOI: 10.1111/HIV.70120. Epub 2025 15. listopada. PMID: 41088922; PMCID: PMC12757896.
3. Institut za javno zdravstvo Sjeverne Makedonije, Odjel za prevenciju i kontrolu zaraznih bolesti, unutar Odjela za epidemiologiju zaraznih bolesti, Godišnja izvješća o zaraznim bolestima Instituta za javno zdravstvo Sjeverne Makedonije, https://www.iph.mk/en/home/oddelenie/22

Jodna suplementacija kao uzrok ekstremne hipotireoze - prikaz slučaja

Kristina Artuković[1], Mate Žepina[2], Nives Grgurević[3]

1. Dom zdravlja Zadarske županije
2. Dom zdravlja Zadarske županije
3. Specijalistička ordinacija obiteljske medicine Nives Grgurević specijalistica obiteljske medicine, Šibenska 11, 23 000 Zadar

Ključne riječi: hipotireoza, Wolff–Chaikoff efekt, jod, Lugolova otopina, levotiroksin, autoimuna bolest štitnjače, suplementi/alternativna terapija
Adresa za dopisivanje: Kristina Artuković, F.Alfirevića 8, 23 000 Zadar
E adresa: kristina.artukovic@dzzdzup.hr
ORCID: Kristina Artuković: 0009-0002-3836-8356
Mate Žepina: 0009-0006-4013-3715
Nives Grgurević: 0009-0005-6914-4891

Uvod s ciljem: Hipotireoza je čest endokrinološki poremećaj u ordinacijama obiteljske medicine, a standard liječenja je nadomjesna terapija levotiroksinom. Unatoč dostupnim smjernicama, dio bolesnika odbija konvencionalno liječenje i poseže za alternativnim ili "prirodnim" pripravcima, uključujući jodne otopine. Prekomjerni unos joda može dovesti do poremećaja funkcije štitnjače putem Wolff-Chaikoffova učinka, s mogućim paradoksalnim pogoršanjem hipotireoze. Prikazujemo slučaj pacijentice s izrazito povišenim vrijednostima TSH nakon samoinicijativne primjene Lugolove otopine. Cilj ovog prikaza slučaja je upozoriti na potencijalne rizike nekontroliranog uzimanja jodnih pripravaka te naglasiti važnost edukacije i savjetovanja bolesnika u obiteljskoj medicini.

Prikaz slučaja i rasprava: Prikazujemo slučaj 59-godišnje pacijentice koja se javila u ambulantu obiteljske medicine zbog povišenog TSH od 13,5 mIU/L, uz normalnu vrijednost FT4, a bila je bez izraženih simptoma hipotireoze. Prema smjernicama za liječenje hipotireoze zbog povišenog TSH u ovom slučaju indicirana terapija levotiroksinom, koja joj je i preporučena, a u dozi 25 µg dnevno. Pacijentica je odbila konvencionalno liječenje te je odlučila isprobati prirodne pripravke. Nakon savjeta od neformalnog izvora, počela je uzimati Lugolovu otopinu u malim dozama (par kapi dnevno). Nakon nekoliko tjedana, kontrolni laboratorijski nalazi pokazali su dramatičan porast TSH na 170.000 mIU/L uz FT4 1,4 ng/dL. Unatoč izrazito povišenom TSH, pacijentica je bila klinički stabilna, bez izraženih simptoma hipotireoze (bez značajne slabosti, zimice, suhe kože, bradikardije ili kognitivnih poteškoća). Uzimanje Lugolove otopine je prekinuto, te je pacijentica započela standardnu nadomjesnu terapiju levotiroksinom uz redovito praćenje funkcije štitnjače i kliničkog statusa. Ovaj slučaj ukazuje na rijetku, ali značajnu reakciju na nekontrolirani unos joda u bolesnika s subkliničkom hipotireozom, gdje je laboratorijski nalaz bio izrazito abnormalan, a klinička slika blaga. Uzimanje jodnih pripravaka može dovesti do Wolf-Chaikoffova učinka, fiziološkog mehanizma štitnjače kojom se sprječava prekomjerna proizvodnja hormona kada u organizam naglo biva unešena velika količina joda. Ovaj mehanizam se može dogoditi i u prethodno zdravih, ali većinom se događa u osoba s autoimunim bolestima, posebice Hashimoto tireoiditisom. Visoka koncentracija joda inhibira tireoidnu peroksidazu te se smanjeno sintetiziraju T3 i T4 hormoni, dovodeći do značajne hipotireoze. Zdrava štitnjača brzo "pobjegne" ovom mehanizmu te se sinteza hormona vraća u normalu odnosno postiže se eutireoza, ali kod autoimunih bolesti hipotireoza može trajati značajno dugo, a kao najgora posljedica moguća je i miksedemska koma.

Zaključak: Ovaj slučaj ilustrira da nekontrolirani unos jodnih pripravaka, poput Lugolove otopine, može dovesti do dramatičnog pogoršanja funkcije štitnjače u pacijentica s subkliničkom hipotireozom, uslijed Wolff–Chaikoffova učinka. Slučaj naglašava važnost temeljitog uzimanja anamneze o suplementima i alternativnim pripravcima te edukacije pacijenata o rizicima samoinicijativnog korištenja jodnih preparata.

LITERATURA:

1. Wolff J, Chaikoff IL. Plasma inorganic iodide as a homeostatic regulator of thyroid function. J Biol Chem. 1948;174(2):555–64.
2. Leung AM, Braverman LE, Pearce EN. Iodine-induced thyroid dysfunction. Curr Opin Endocrinol Diabetes Obes. 2012;19(5):414–9.
3. Garber JR, Cobin RH, Gharib H, Hennessey JV, Klein I, Mechanick JI, et al. Clinical practice guidelines for hypothyroidism in adults: cosponsored by the American Association of Clinical Endocrinologists and the American Thyroid Association. Thyroid. 2012;22(12):1200–35.
4. Zimmermann MB. Iodine deficiency. Endocr Rev. 2009;30(4):376–408.

Extended Abstract
Case report

Iodine Supplementation as a Cause of Extreme Hypothyroidism - Case Report

Kristina Artuković[1], Mate Žepina[2], Nives Grgurević[3]

1. Medical center of Zadar County
2. Medical center of Zadar County
3. Specialist family medicine practice Nives Grgurević MD, Šibenska 11, 23 000 Zadar

Keywords: hypothyroidism, Wolff–Chaikoff effect, iodine, Lugol's solution, levothyroxine, autoimmune thyroid disease, supplements/alternative therapy
Correspondence address: Kristina Artuković, F.Alfirevića 8, 23 000 Zadar
E-mail: kristina.artukovic@dzzdzup.h
ORCID: Kristina Artuković: 0009-0002-3836-8356
Mate Žepina: 0009-0006-4013-3715
Nives Grgurević: 0009-0005-6914-4891

Introduction with aim: Hypothyroidism is a common endocrine disorder in primary care, and the standard for treatment is levothyroxine replacement therapy. Despite available guidelines, some patients refuse conventional treatment and turn to alternative or "natural" preparations, including iodine solutions. Excessive iodine intake may disrupt thyroid function through the Wolff–Chaikoff effect, paradoxically worsening hypothyroidism. We present a case of a patient with markedly elevated TSH levels following self-initiated use of Lugol's solution. The aim of this case report is to raise awareness of the potential risks of uncontrolled iodine supplementation and to emphasize the importance of patient education and counseling in family medicine.

Case presentation and discussion: We report a case of a 59-year-old woman who presented to a family medicine clinic with a TSH level of 13.5 mIU/L and normal FT4, without significant symptoms of hypothyroidism. According to treatment guidelines, levothyroxine therapy was indicated and recommended at a dose of 25 µg daily. The patient refused conventional treatment and decided to try natural remedies. Following advice from an informal source, she began taking Lugol's solution in small doses (a few drops daily). After several weeks, follow-up laboratory tests showed a dramatic increase in TSH to 170,000 mIU/L with FT4 1.4 ng/dL. Despite the markedly elevated TSH, the patient remained clinically stable without significant symptoms of hypothyroidism (no notable weakness, cold intolerance, dry skin, bradycardia, or cognitive impairment). Lugol's solution was discontinued, and levothyroxine replacement therapy was initiated with regular monitoring of thyroid function and clinical status. This case highlights a rare but significant reaction to uncontrolled iodine intake in a patient with subclinical hypothyroidism, where laboratory results were profoundly abnormal while the clinical presentation remained mild. Iodine supplementation can trigger the Wolff–Chaikoff effect, a physiological thyroid mechanism that prevents excessive hormone production when a large amount of iodine is suddenly ingested. This mechanism can occur in previously healthy individuals but is more common in patients with autoimmune thyroid disease, especially Hashimoto's thyroiditis. High iodine concentrations inhibit thyroid peroxidase, reducing T3 and T4 synthesis and leading to significant hypothyroidism. In a healthy thyroid, an "escape" from this mechanism occurs rapidly, restoring hormone synthesis and euthyroidism; however, in autoimmune disease, hypothyroidism may persist for a prolonged period, and in severe cases, myxedema coma may occur.

Conclusion: This case illustrates that uncontrolled iodine supplementation, such as Lugol's solution, can cause dramatic deterioration of thyroid function in patients with subclinical hypothyroidism due to the Wolff–Chaikoff effect. The case emphasizes the importance of thorough history taking regarding supplements and alternative preparations and educating patients about the risks of self-initiated iodine use.

REFERENCES:

1. Wolff J, Chaikoff IL. Plasma inorganic iodide as a homeostatic regulator of thyroid function. J Biol Chem. 1948;174(2):555–64.
2. Leung AM, Braverman LE, Pearce EN. Iodine-induced thyroid dysfunction. Curr Opin Endocrinol Diabetes Obes. 2012;19(5):414–9.
3. Garber JR, Cobin RH, Gharib H, Hennessey JV, Klein I, Mechanick JI, et al. Clinical practice guidelines for hypothyroidism in adults: cosponsored by the American Association of Clinical Endocrinologists and the American Thyroid Association. Thyroid. 2012;22(12):1200–35.
4. Zimmermann MB. Iodine deficiency. Endocr Rev. 2009;30(4):376–408.

Bruceloza s miokarditisom i sindromom postvirusnog umora: dijagnostički izazov kod febrilnog pacijenta

Ana Miljković[1], Jasmina Jelić Medić[2], Eva Stojković[3], Aleksandra Cvetković[4]

1. Medicinski fakultet, Univerzitet u Novom Sadu, Novi Sad, Srbija
2. Služba opšte medicine, Dom zdravlja Novi Sad, Novi Sad, Srbija
3. Služba za zdravstvenu zaštitu radnika, Dom zdravlja Novi Sad, Novi Sad, Srbija
4. Zdravstvena zaštita odraslog stanovništva, Dom zdravlja Zemun, Zemun, Srbija

Ključne riječi: bruceloza; zoonoze; nejasno febrilno stanje; nepasterizirano mlijeko; obiteljska medicina
Adresa za dopisivanje: Ana Miljković, Hajduk Veljkova 3, 21000 Novi Sad, Srbija
E adresa: ana.miljkovic@mf.uns.ac.rs
ORCID: Ana Miljković: 0000-0001-6540-5349
Jasmina Jelić Medić: 0009-0000-7998-8346
Eva Stojković: 0000-0002-0737-3163
Aleksandra Cvetković: 0000-0001-5303-4819

Uvod s ciljem. Bruceloza predstavlja zoonozu s nespecifičnom kliničkom slikom, što često otežava pravovremenu dijagnozu u primarnoj zdravstvenoj zaštiti. Najčešći putevi prijenosa bolesti uključuju izravni kontakt sa zaraženim životinjama i konzumaciju nepasteriziranih mliječnih proizvoda. Cilj ovog rada je prikazati slučaj pacijentice s dugotrajnim nejasnim febrilnim stanjem i kompleksnom kliničkom slikom.

Prikaz slučaja. Pacijentica, u dobi 35 godina, potražila je pomoć zbog višemjesečne subfebrilnosti, malaksalosti i opće slabosti, koje su se intenzivirale nakon preležane SARS-CoV-2 infekcije. Epidemiološkom anamnezom utvrđeno je da je konzumirala svježe nepasterizirano magareće mlijeko. Klinički pregled nije pokazao značajne patološke nalaze. Laboratorijska ispitivanja otkrila su znakove akutne infekcije Mycoplasma pneumoniae, pozitivan titar EBV IgG (virusa Epstein-Barr), pozitivan nalaz antinuklearnih antitijela (ANA), kao i serološku potvrdu bruceloze (pozitivan IgM, granični IgG). Dijagnosticirani su akutni mijoperikarditis, postvirusni sindrom kroničnog umora, sindrom dugog COVID-a, disfunkcija autonomnog živčanog sustava i bruceloza. Terapija je uključivala kombinaciju doksiciklina i rifampicina, uz suportivnu terapiju i strogo mirovanje došlo je do kliničkog poboljšanja.

Rasprava. Bruceloza je značajna zoonotska bolest s globalnim zdravstvenim i ekonomskim posljedicama, a na ljude se najčešće prenosi kontaktom sa zaraženim životinjama ili konzumacijom nepasteriziranih mliječnih proizvoda, što je u ovom slučaju povezano s unosom svježeg magarećeg mlijeka. Unatoč činjenici da su mjere kontrole u pojedinim zemljama, uključujući Srbiju, značajno smanjile prevalenciju bolesti, rizik od zaražavanja i dalje postoji, dok nespecifična klinička slika i komorbiditeti mogu otežati dijagnostiku. Pravovremena serološka dijagnoza i standardna kombinirana antibiotska terapija ključni su za uspješno liječenje i prevenciju teških komplikacija.

Zaključak. Prikazani slučaj naglašava važnost detaljne epidemiološke anamneze u procjeni nejasnih febrilnih stanja unutar obiteljske medicine. Bruceloza treba biti razmatrana u diferencijalnoj dijagnozi, osobito kod pacijenata koji konzumiraju nepasterizirane mliječne proizvode. Integrirani pristup "One Health" ima ključnu ulogu u prevenciji i ranom otkrivanju zoonotskih infekcija.

LITERATURA:

1. Meena, D. S., Sharma, L., Bishnoi, J., & Soni, M. (2023). Serological and molecular prevalence of Brucella spp. among livestock species in Rajasthan, India. Frontiers in Veterinary Science. Link
2. Mpatswenumugabo, J. P., Mukasafari, M. A., et al. (2023). Review of milk-associated bacterial zoonoses in East Africa. Journal of Applied Microbiology.Link
3. Buttigieg, S. C., et al. (2018). Brucellosis control in Malta and Serbia: a One Health evaluation.
4. Stević N, Kosović E, Radovanović T, Zurovac Sapundžić Z, Bacić D, Radojičić S. Bruceloza i koncept „jedno zdravlje “. 33. Savetovanje veterinara Srbije, Zlatibor, 8-11. septembar 2022. 2022:30-9.

Extended Abstract
Case report

Brucellosis presenting with myocarditis and post-viral fatigue syndrome: a diagnostic challenge in a febrile patient

Ana Miljković[1], Jasmina Jelić Medić[2], Eva Stojković[3], Aleksandra Cvetković[4]

1. Faculty of Medicine, Univeristy in Novi Sad, Novi Sad, Serbia
2. General Practise Service, Primary Health Care Center Novi Sad, Novi Sad, Serbia
3. Occupational Health Service, Primary Health Care Center Novi Sad, Novi Sad, Serbia
4. Adult Primary Healrh Care, Primary Health Care Center Zemun, Zemun, Srbija

Keywords: brucellosis; zoonoses; fever of unknown origin; unpasteurized milk; family medicine
Correspondence address: Ana Miljković, Hajduk Veljkova 3, 21000 Novi Sad, Srbija
E-mail: ana.miljkovic@mf.uns.ac.rs
ORCID: Ana Miljković: 0000-0001-6540-5349
Jasmina Jelić Medić: 0009-0000-7998-8346
Eva Stojković: 0000-0002-0737-3163
Aleksandra Cvetković: 0000-0001-5303-4819

Introduction with aim: Brucellosis is a zoonotic infectious disease with a nonspecific clinical presentation, which often complicates timely diagnosis in primary health care. The most common routes of transmission include direct contact with infected animals and the consumption of unpasteurized dairy products. The aim of this paper is to present a case of a patient with prolonged fever of unknown origin and a complex clinical presentation.

Case presentation: A 35-year-old female patient presented with several months of subfebrile temperatures, fatigue, and general weakness, which intensified after a previous SARS-CoV-2 infection. Epidemiological history revealed the consumption of fresh, unpasteurized donkey milk. Physical examination showed no significant pathological findings. Laboratory investigations demonstrated signs of acute Mycoplasma pneumoniae infection, positive EBV IgG titers (Epstein-Barr virus), a positive ANA (antinuclear antibody) test, and serological confirmation of brucellosis (positive IgM, borderline IgG). The patient was diagnosed with acute myopericarditis, post-viral chronic fatigue syndrome, long COVID syndrome, autonomic nervous system dysfunction, and brucellosis. Treatment included a combination of doxycycline and rifampicin, along with supportive therapy and strict rest, resulting in clinical improvement.

Discussion: Brucellosis is a significant zoonotic disease with global health and economic impacts, most commonly transmitted to humans through contact with infected animals or consumption of unpasteurized dairy products, which in this case was associated with the intake of fresh donkey milk. Although control measures in some countries, including Serbia, have substantially reduced disease prevalence, the risk of reintroduction remains, while nonspecific clinical presentation and comorbidities may complicate diagnosis. Timely serological confirmation and standard combination antibiotic therapy are essential for successful treatment and prevention of severe complications.

Conclusion: This case highlights the importance of a thorough epidemiological history in the assessment of fever of unknown origin in family medicine. Brucellosis should be considered in the differential diagnosis, particularly in patients who consume unpasteurized dairy products. An integrated One Health approach plays a crucial role in the prevention and early detection of zoonotic infections.

REFERENCES:

1. Meena, D. S., Sharma, L., Bishnoi, J., & Soni, M. (2023). Serological and molecular prevalence of Brucella spp. among livestock species in Rajasthan, India. Frontiers in Veterinary Science. Link
2. Mpatswenumugabo, J. P., Mukasafari, M. A., et al. (2023). Review of milk-associated bacterial zoonoses in East Africa. Journal of Applied Microbiology.Link
3. Buttigieg, S. C., et al. (2018). Brucellosis control in Malta and Serbia: a One Health evaluation.
4. Stević N, Kosović E, Radovanović T, Zurovac Sapundžić Z, Bacić D, Radojičić S. Bruceloza i koncept „jedno zdravlje “. 33. Savetovanje veterinara Srbije, Zlatibor, 8-11. septembar 2022. 2022:30-9.

Dijagnostički izazovi fibrilacije atrija – prikaz slučaja

Lucija Lisak[1], Diana Sabljak Malkoč[2]

1. Medicinski Fakultet Sveučilišta u Zagrebu
2. Dom zdravlja Sisačko-moslavačke županije

Ključne riječi: fibrilacija atrija, astma, primarna zdravstvena zaštita
Adresa za dopisivanje: Matije Gupca 51, 44320 Kutina
E adresa: lucija.lisak@gmail.com
ORCID: Lucija Lisak: 0009-0009-8591-9561
Diana Sabljak Malkoč: 0000-0003-4691-0045

Uvod s ciljem: Fibrilacija atrija (FA) najčešća je srčana aritmija. Prevalencija raste s dobi. Česti uzroci su hipertenzija, koronarna bolest srca, kardiomiopatija, bolest srčanih zalistaka, alkoholizam, hipertireoza, plućna embolija i brojni drugi. Klinička prezentacija može varirati od asimptomatske do simptoma poput palpitacija, zaduhe i slabosti što može predstavljati dijagnostički izazov. Cilj ovog prikaza slučaja je naglasiti važnost prepoznavanja FA kod bolesnika sa simptomima koji se mogu pripisati njegovim drugim bolestima.

Prikaz slučaja: Umirovljenica u dobi od 68 godina došla je na pregled u ordinaciju liječnika obiteljske medicine zbog osjećaja nedostatka zraka, ubrzanog rada srca te bržeg umaranja zadnja 3-4 mjeseca svakih nekoliko dana. Obiteljska anamneza bila je pozitivna na srčane bolesti. Bolesnica je preboljela karcinom dojke, liječena je operativno i kemoradioterapijom. Boluje od astme, ali terapiju nije koristila redovito. Funkcije su bile uredne, a alkohol je konzumirala prigodno. Od lijekova je povremeno uzimala antihistaminik, intranazalni kortikosteroid, inhalacijski kortikosteroid u kombinaciji s bronhodilatatorom. Kliničkim pregledom akcija srca je bila ritmična, tonovi jasni, bez šuma te nad plućima difuzno produžen ekspirij. Krvni tlak je iznosio 151/90mmHg, puls 80/min, a saturacija 97%. Prema dnevniku tlaka vrijednosti su bile uredne. Nalaz elektrokardiograma (EKG) pokazao je sinus ritam, intermedijarnu električnu os, bez promjena ST spojnice. Preporučeno je učiniti kontrolu pulmologa. U laboratorijskim nalazima osim hiperlipidemije nije bilo drugih parametara izvan referentnih vrijednosti. Nalazi tumorskih markera, rendgenogram srca i pluća, ultrazvuk su bili uredni. NT-proBNP iznosio je 426 pg/mL. Učinjen je holter EKG-a koji je otkrio učestale paroksizme FA, maksimalne frekvencije 185/min. Žurno je učinjen ultrazvuk srca i pregled kardiologa. Bolesnici je uveden rivaroksaban 20mg, bisoprolol 1,25mg, perindopril 2mg i atorvastatin 20mg. Postavljena je indikacija za izolaciju plućnih vena nakon koje je bolesnica subjektivno bolje.

Rasprava: FA se u oko 80% slučajeva javlja u prisutnosti najmanje 2 komorbiditeta. Važno ju je prepoznati na vrijeme kako bi spriječili tromboembolijske događaje te djelovali na komorbiditete. Simptomi su nespecifični te se često mogu pripisati drugim bolestima kao što su opstruktivne bolesti pluća. Neke studije podupiru činjenicu da su astma i neadekvatna kontrola astme čimbenici rizika za FA, a dijele i isti inflamatorni put. Nije poznato smanjuje li adekvatna kontrola astme incidenciju FA i utječe li na trajanje aritmije. Uloga NT-proBNP-a u ranom otkrivanju FA nije u potpunosti potvrđena te su potrebna buduća istraživanja.

Zaključak: Ovaj prikaz slučaja ističe važnost raspoznavanja FA između drugih stanja koja se diferencijalnodijagnostički uklapaju u okvir FA. U primarnoj zdravstvenoj zaštiti i dalje ne postoje jasno definirani kriteriji za probir bolesnika s nespecifičnim simptomima poput dispneje i umora, što može dovesti do odgode dijagnoze paroksizmalne fibrilacije atrija.

LITERATURA:

1. van Deutekom C, Weil LI, Middeldorp ME, Samuel M, Geelhoed B, Velt MJH, et al. Multimorbidity and risk of atrial fibrillation in the Lifelines cohort. Eur Heart J Open. 2025;5(6):oeaf164. doi:10.1093/ehjopen/oeaf164.
2. Van Gelder IC, Rienstra M, Bunting KV, Casado-Arroyo R, Caso V, Crijns HJGM, et al. 2024 ESC Guidelines for the management of atrial fibrillation developed in collaboration with the European Association for Cardio-Thoracic Surgery (EACTS). Eur Heart J. 2024;45(36):3314-3414. doi:10.1093/eurheartj/ehae176.
3. Xue Z, Guo S, Liu X, Ma J, Zhu W, Zhou Y, et al. Impact of COPD or asthma on the risk of atrial fibrillation: a systematic review and meta-analysis. Front Cardiovasc Med. 2022;9:872446. doi:10.3389/fcvm.2022.872446.
4. Nogueira-Garcia B, Alves M, Pinto FJ, Caldeira D. The association between asthma and atrial fibrillation: systematic review and meta-analysis. Sci Rep. 2024;14(1):2241. doi:10.1038/s41598-023-50466-w.
5. Cepelis A, Brumpton BM, Malmo V, Laugsand LE, Loennechen JP, Ellekjær H, et al. Associations of asthma and asthma control with atrial fibrillation risk: results from the Nord-Trøndelag Health Study (HUNT). JAMA Cardiol.2018;3(8):721-728. doi:10.1001/jamacardio.2018.1901.

Extended Abstract
Case report

Diagnostic Challenges of Atrial Fibrillation – A Case Report

Lucija Lisak[1], Diana Sabljak Malkoč[2]

1. University of Zagreb School of Medicine
2. Health Care Centre Sisačko-moslavačka County

Keywords: atrial fibrillation, asthma, primary health care
Correspondence address: Matije Gupca 51, 44320 Kutina
E-mail: lucija.lisak@gmail.com
ORCID: Lucija Lisak: 0009-0009-8591-9561
Diana Sabljak Malkoč: 0000-0003-4691-0045

Introduction with Aim: Atrial fibrillation (AF) is the most common cardiac arrhythmia, with prevalence increasing with age. Common etiologies include hypertension, coronary artery disease, cardiomyopathy, valvular heart disease, chronic alcohol use, hyperthyroidism, pulmonary embolism, and others. Clinical presentation may range from asymptomatic to symptoms such as palpitations, dyspnea, and fatigue, which may pose a diagnostic challenge. The aim of this case report is to emphasize the importance of recognizing AF in patients whose symptoms may be attributed to comorbid conditions.

Case report: A 68-year-old retired woman presented to her family physician with complaints of shortness of breath, palpitations, and increased fatigability occurring every few days over the past 3–4 months. Family history was positive for cardiovascular disease. She had a history of breast cancer treated surgically followed by chemoradiotherapy. She also had asthma but was non-adherent to prescribed therapy. Functional status was preserved, and alcohol consumption was occasional. Her medications included intermittent use of an antihistamine, intranasal corticosteroid, and an inhaled corticosteroid combined with a bronchodilator. On physical examination, cardiac rhythm was regular, heart sounds were normal without murmurs, and diffuse prolonged expiration was noted on lung auscultation. Blood pressure was 151/90 mmHg, heart rate 80 beats/min, and oxygen saturation 97%. Home blood pressure recordings were within normal limits. Electrocardiography (ECG) showed sinus rhythm, intermediate electrical axis, and no ST-segment abnormalities. Pulmonology follow-up was recommended. Laboratory findings were within reference ranges except for hyperlipidemia. Tumor markers, chest radiography, and ultrasound findings were unremarkable. NT-proBNP level was 426 pg/mL. Twenty-four-hour Holter ECG monitoring revealed frequent paroxysms of AF with a maximum ventricular rate of 185 beats/min. Urgent transthoracic echocardiography and cardiology evaluation were performed. The patient was started on rivaroxaban 20 mg, bisoprolol 1.25 mg, perindopril 2 mg, and atorvastatin 20 mg daily. Pulmonary vein isolation was indicated, after which the patient reported subjective improvement.

Discussion: AF occurs in approximately 80% of cases in the presence of at least two comorbidities. Early recognition is crucial to prevent thromboembolic events and to address contributing comorbid conditions. Symptoms are nonspecific and are often attributed to other diseases such as obstructive pulmonary disorders. Some studies support the association between asthma, poor asthma control, and increased risk of AF, suggesting shared inflammatory pathways. It remains unclear whether adequate asthma control reduces AF incidence or affects arrhythmia duration. The role of NT-proBNP in early AF detection has not been fully established, and further research is required.

Conclusion: This case report highlights the importance of distinguishing AF from other conditions within the differential diagnostic spectrum. In primary care, clearly defined screening criteria for patients presenting with nonspecific symptoms such as dyspnea and fatigue are still lacking, which may lead to delayed diagnosis of paroxysmal atrial fibrillation.

REFERENCES:

1. van Deutekom C, Weil LI, Middeldorp ME, Samuel M, Geelhoed B, Velt MJH, et al. Multimorbidity and risk of atrial fibrillation in the Lifelines cohort. Eur Heart J Open. 2025;5(6):oeaf164. doi:10.1093/ehjopen/oeaf164.
2. Van Gelder IC, Rienstra M, Bunting KV, Casado-Arroyo R, Caso V, Crijns HJGM, et al. 2024 ESC Guidelines for the management of atrial fibrillation developed in collaboration with the European Association for Cardio-Thoracic Surgery (EACTS). Eur Heart J. 2024;45(36):3314-3414. doi:10.1093/eurheartj/ehae176.
3. Xue Z, Guo S, Liu X, Ma J, Zhu W, Zhou Y, et al. Impact of COPD or asthma on the risk of atrial fibrillation: a systematic review and meta-analysis. Front Cardiovasc Med. 2022;9:872446. doi:10.3389/fcvm.2022.872446.
4. Nogueira-Garcia B, Alves M, Pinto FJ, Caldeira D. The association between asthma and atrial fibrillation: systematic review and meta-analysis. Sci Rep. 2024;14(1):2241. doi:10.1038/s41598-023-50466-w.
5. Cepelis A, Brumpton BM, Malmo V, Laugsand LE, Loennechen JP, Ellekjær H, et al. Associations of asthma and asthma control with atrial fibrillation risk: results from the Nord-Trøndelag Health Study (HUNT). JAMA Cardiol.2018;3(8):721-728. doi:10.1001/jamacardio.2018.1901.

Bol u nozi, mali simptom – velika dijagnoza

Prikaz slučaja akutne arterijske okluzije u ambulanti obiteljske medicine

Marijana Majić[1], Katarina Bekavac[1], Matea Vodanović[1], Marion Tomičić[1,2]

1. Dom zdravlja Splitsko – dalmatinske županije
2. Medicinski Fakultet, Sveučilište u Splitu

Ključne riječi: okluzivne arterijske bolesti, periferna arterijska bolest, donji ekstremiteti, pušenje duhana, primarna zdravstvena zaštita
E adresa: marijana.majic92@gmail.com
ORCID: Marijana Majić: 0009-0006-9109-8446
Katarina Bekavac: 0009-0003-9835-6004
Matea Vodanović: 0009-0005-8534-6397
Marion Tomičić: 0000-0003-2148-3227

Uvod s ciljem: Bol u donjem dijelu leđa s iradijacijom u donje ekstremitete čest je simptom u ambulanti obiteljske medicine i najčešće se povezuje s degenerativnim promjenama kralježnice. Međutim, u starijih bolesnika s vaskularnim rizičnim čimbenicima nužno je razmotriti i druge, potencijalno životno ugrožavajuće uzroke. Periferna arterijska bolest može se klinički prezentirati atipično, ponekad imitirajući vertebrogeni bolni sindrom. Akutna arterijska okluzija donjih ekstremiteta predstavlja hitno stanje s visokom stopom morbiditeta i mortaliteta ako se ne prepozna i ne liječi pravodobno. Cilj ovog prikaza slučaja je istaknuti važnost diferencijalno-dijagnostičkog razmišljanja u primarnoj zdravstvenoj zaštiti te pravodobnog prepoznavanja akutne ili kritične ishemije donjih ekstremiteta.

Prikaz slučaja: Pacijentica u dobi od 66 godina javila se u ambulantu obiteljske medicine zbog jakih bolova u donjem dijelu leđa s propagacijom u oba donja ekstremiteta. Tegobe su bile dugotrajnog karaktera, uz naglo pogoršanje intenziteta tijekom posljednja tri dana. Navodila je noćno buđenje zbog boli, a subjektivno olakšanje postizala je jedino u klečećem položaju uz krevet. Sfinkterske funkcije bile su uredne. Unatoč primjeni nesteroidnog antireumatika nije došlo do olakšanja tegoba. Iz anamneze se isticala ranija operacija lumbosakralne kralježnice 2017. godine i operacija vratne kralježnice prije 20 godina. Pacijentica je dugogodišnji pušač oko 20 cigareta dnevno kroz 35 godina te nema evidentiranu kroničnu terapiju. Kliničkim pregledom pacijentica je bila hemodinamski stabilna, afebrilna i bez znakova akutnog neurološkog ispada. Testovi provokacije radikularne boli bili su uredni, dok je fizikalnim pregledom uočen izostanak distalnih perifernih pulsacija na lijevom donjem ekstremitetu, uz obostrano oslabljene pulsacije periferno. Navedeni nalaz pobudio je sumnju na akutnu arterijsku okluziju te je pacijentica hitno upućena na bolničko liječenje. Tijekom hospitalizacije MSCT angiografijom potvrđena je višerazinska aterosklerotska bolest s okluzijom arteriae femoralis superficialis lijevo te značajnim stenozama poplitealne i potkoljeničnih arterija. Provedeno je kirurško liječenje u vidu endarterektomije arteriae femoralis communis, superficialis i profunda lijevo uz patch plastiku, uz povoljan postoperativni tijek. Po otpustu je uvedena kombinirana antitrombocitna, antikoagulantna i hipolipemijska terapija, uz planirano daljnje vaskularno praćenje.

Rasprava: Prikazani slučaj ilustrira atipičnu prezentaciju periferne arterijske bolesti koja je inicijalno nalikovala vertebrogenoj boli. Dugogodišnje pušenje i starija životna dob predstavljali su značajne rizične čimbenike. Ključan trenutak u dijagnostici bio je pažljiv klinički pregled s procjenom periferne cirkulacije, što je omogućilo pravodobno upućivanje i sprječavanje daljnjih ishemijskih komplikacija.

Zaključak: U ambulanti obiteljske medicine nužno je zadržati visok stupanj kliničke sumnje kod bolesnika s bolovima u donjim ekstremitetima, osobito u prisutnosti vaskularnih rizičnih čimbenika. Temeljit klinički pregled, uključujući procjenu periferne cirkulacije, ključan je za rano prepoznavanje periferne arterijske bolesti i pravodobno liječenje. Prikazani slučaj ima značajnu edukacijsku i kliničku vrijednost jer ističe važnost sveobuhvatnog kliničkog pregleda u bolesnika s bolovima u donjim ekstremitetima. Pravodobno prepoznavanje vaskularne etiologije boli omogućuje brzo liječenje i značajno poboljšava ishod bolesnika.

LITERATURA:

1. Shamaki GR, Markson F, Soji-Ayoade D, Agwuegbo CC, Bamgbose MO, Tamunoinemi BM. Peripheral Artery Disease: A Comprehensive Updated Review. Curr Probl Cardiol. 2022 Nov;47(11):101082. doi: 10.1016/j.cpcardiol.2021.101082. Epub 2021 Dec 11. PMID: 34906615.
2. Mandaglio-Collados D, Marín F, Rivera-Caravaca JM. Peripheral artery disease: Update on etiology, pathophysiology, diagnosis and treatment. Med Clin (Barc). 2023 Oct 27;161(8):344-350. English, Spanish. doi: 10.1016/j.medcli.2023.06.005. Epub 2023 Jul 28. PMID: 37517924.
3. Criqui MH, Aboyans V. Epidemiology of peripheral artery disease. Circ Res. 2015 Apr 24;116(9):1509-26. doi: 10.1161/CIRCRESAHA.116.303849. Erratum in: Circ Res. 2015 Jun 19;117(1):e12. doi: 10.1161/RES.0000000000000059. PMID: 25908725.
4. Campia U, Gerhard-Herman M, Piazza G, Goldhaber SZ. Peripheral Artery Disease: Past, Present, and Future. Am J Med. 2019 Oct;132(10):1133-1141. doi: 10.1016/j.amjmed.2019.04.043. Epub 2019 May 29. PMID: 31150643.
5. Bevan GH, White Solaru KT. Evidence-Based Medical Management of Peripheral Artery Disease. Arterioscler Thromb Vasc Biol. 2020 Mar;40(3):541-553. doi: 10.1161/ATVBAHA.119.312142. Epub 2020 Jan 30. PMID: 31996023.

Extended Abstract
Case report

Leg pain: minor symptom - major diagnosis

A Case Report of Acute Arterial Occlusion in a Family Medicine Practice

Marijana Majić[1], Katarina Bekavac[1], Matea Vodanović[1], Marion Tomičić[1,2]

1. Health Center of Split-Dalmatia County
2. School of Medicine, University of Split

Keywords: occlusive arterial diseases, peripheral artery disease, lower extremities, tobacco smoking, primary health care
E-mail: marijana.majic92@gmail.com
ORCID: Marijana Majić: 0009-0006-9109-8446
Katarina Bekavac: 0009-0003-9835-6004
Matea Vodanović: 0009-0005-8534-6397
Marion Tomičić: 0000-0003-2148-3227

Introduction with Aim: Low back pain radiating to the lower extremities is a common symptom encountered in family medicine practice and is most often associated with degenerative spinal disease. However, in elderly patients with vascular risk factors, other potentially life-threatening causes must also be considered. Peripheral artery disease (PAD) may present with atypical clinical features, sometimes mimicking vertebrogenic pain syndromes. Acute arterial occlusion of the lower extremities represents a medical emergency with high morbidity and mortality if not recognized and treated promptly. The aim of this case report is to emphasize the importance of differential diagnostic reasoning in primary health care and the timely recognition of acute or critical limb ischemia.

Case Report: A 66-year-old female patient presented to a family medicine clinic with severe low back pain radiating to both lower extremities. The symptoms had been present for a prolonged period, with a sudden worsening of intensity over the previous three days. She reported nocturnal awakening due to pain and stated that subjective relief was achieved only by kneeling beside the bed. Sphincter function was preserved. Treatment with nonsteroidal anti-inflammatory drugs did not result in symptom relief. Her medical history was notable for lumbar spine surgery in 2017 and cervical spine surgery 20 years earlier. The patient was a long-term smoker, consuming approximately 20 cigarettes per day for 35 years, and was not receiving any chronic medication. On clinical examination, the patient was hemodynamically stable, afebrile, and showed no signs of acute neurological deficit. Radicular provocation tests were negative. However, physical examination revealed the absence of distal peripheral pulses in the left lower extremity, with bilaterally weakened peripheral pulses. This finding raised suspicion of acute arterial occlusion, and the patient was urgently referred for hospital treatment. During hospitalization, multislice computed tomography (MSCT) angiography confirmed multilevel atherosclerotic disease with occlusion of the left superficial femoral artery and significant stenoses of the popliteal and crural arteries. Surgical treatment was performed, consisting of endarterectomy of the left common, superficial, and profunda femoral arteries with patch angioplasty, followed by a favorable postoperative course. Upon discharge, combined antiplatelet, anticoagulant, and lipid-lowering therapy was initiated, with planned further vascular follow-up.

Discussion: This case illustrates an atypical presentation of peripheral artery disease that initially resembled vertebrogenic pain. Long-term smoking and advanced age represented significant risk factors. A key moment in the diagnostic process was a careful clinical examination with assessment of peripheral circulation, which enabled timely referral and prevention of further ischemic complications.

Conclusion: In family medicine practice, it is essential to maintain a high level of clinical suspicion in patients presenting with lower extremity pain, particularly in the presence of vascular risk factors. A thorough clinical examination, including assessment of peripheral circulation, is crucial for the early detection of peripheral artery disease and timely treatment. The presented case has significant educational and clinical value, as it highlights the importance of a comprehensive clinical examination in patients with lower extremity pain. Timely recognition of a vascular etiology allows prompt treatment and significantly improves patient outcomes.

REFERENCES:

1. Shamaki GR, Markson F, Soji-Ayoade D, Agwuegbo CC, Bamgbose MO, Tamunoinemi BM. Peripheral Artery Disease: A Comprehensive Updated Review. Curr Probl Cardiol. 2022 Nov;47(11):101082. doi: 10.1016/j.cpcardiol.2021.101082. Epub 2021 Dec 11. PMID: 34906615.
2. Mandaglio-Collados D, Marín F, Rivera-Caravaca JM. Peripheral artery disease: Update on etiology, pathophysiology, diagnosis and treatment. Med Clin (Barc). 2023 Oct 27;161(8):344-350. English, Spanish. doi: 10.1016/j.medcli.2023.06.005. Epub 2023 Jul 28. PMID: 37517924.
3. Criqui MH, Aboyans V. Epidemiology of peripheral artery disease. Circ Res. 2015 Apr 24;116(9):1509-26. doi: 10.1161/CIRCRESAHA.116.303849. Erratum in: Circ Res. 2015 Jun 19;117(1):e12. doi: 10.1161/RES.0000000000000059. PMID: 25908725.
4. Campia U, Gerhard-Herman M, Piazza G, Goldhaber SZ. Peripheral Artery Disease: Past, Present, and Future. Am J Med. 2019 Oct;132(10):1133-1141. doi: 10.1016/j.amjmed.2019.04.043. Epub 2019 May 29. PMID: 31150643.
5. Bevan GH, White Solaru KT. Evidence-Based Medical Management of Peripheral Artery Disease. Arterioscler Thromb Vasc Biol. 2020 Mar;40(3):541-553. doi: 10.1161/ATVBAHA.119.312142. Epub 2020 Jan 30. PMID: 31996023.

8. SLOBODNE TEME

Eozinofilni ezofagitis

Iva Obućina[1]

1. Dom zdravlja Zagreb Centar

Ključne riječi: eozinofilni ezofagitis, alergije, obiteljski liječnik
Adresa za dopisivanje: Iva Obućina, Kauzlarićev prilaz 7, 10 000 Zagreb
E adresa: ivaboras@gmail.com
ORCID: 0009-0004-8965-5229

Uvod s ciljem: Eozinofilni ezofagitis (EoE) je bolest s brzo rastućom incidencijom i prevalencijom koja često ostaje dugo neprepoznata. Simptomi su nespecifični i preklapaju se sa simptomima gastroezofagealne refluksne bolesti (GERB) pa se u praksi često empirijski liječi inhibitorima protonske pumpe (IPP). Cilj rada je podići svijest o EoE stavljajući naglasak na pažljivu evaluaciju simptoma i pridruženih stanja kako bi liječnik obiteljske medicine (LOM) pravovremeno postavio sumnju na ovu bolest.

Rasprava: EoE je kronična imunološki posredovana bolest jednjaka, a patogeneza počiva na interakciji alergena i jednjaka koja u konačnici rezultira upalom, remodeliranjem i fibrozom. Dijagnoza se temelji na simptomima disfunkcije jednjaka i prisutnosti najmanje 15 eozinofila na običnom povećanju u bioptatima jednjaka uz isključenje drugih poremećaja s prisutnom eozinofilnom infiltracijom jednjaka (npr. GERB, reakcije preosjetljivosti na lijekove, hipereozinofilni sindrom). Potrebno je uzeti barem 6 bioptata iz dvije razine jednjaka jer se infiltrati nalaze sporadično, a za opis endoskopskih nalaza koristi se EoE Endoscopic Reference Score koji kategorizira prisutni edem, prstenove, eksudat, brazde i strikture. 60%-80% bolesnika s EoE ima još jedno od alergijskih stanja (alergija na hranu, astma, rinitis i atopijski dermatitis). U adolescenciji i odrasloj dobi najčešći simptomi su disfagija i impakcija hrane, a javljaju se i žgaravica te bol u prsima. U dojenčadi i male djece bolest se prezentira slabim prirastom ili nenapredovanjem na tjelesnoj masi, poteškoćama hranjenja, neprihvaćanjem krute hrane te odbijanjem hrane. U djece školske dobi javlja se bol u abdomenu, povraćanje, regurgitacija i žgaravica. Radi bolje evaluacije disfagije treba obratiti pozornost na prilagodbe u ponašanju koje pacijenti razvijaju kako bi ublažili simptome, a uključuju: pijenje iza svakog zalogaja, rezanje hrane na male komade ili gnječenje hrane, dugotrajno hranjenje, izbjegavanje mesa i hrane ljepljive konzistencije, dugotrajno žvakanje te izbjegavanje tableta. Terapija obuhvaća liječenje upalnog procesa i zbrinjavanje fibrotičkih promjena. Nefarmakološko liječenje se temelji na eliminaciji pojedinih ili šest nutritivnih alergena u koje spadaju: mlijeko, jaja, brašno, orašasti plodovi, soja i morski plodovi. U farmakološkom liječenju se koriste IPP-ovi koji svoj učinak u liječenju EoE-a ostvaruju drugim mehanizmima, a ne smanjenjem refluksa što pacijentima treba naglasiti radi bolje adherencije, topički kortikosteroidi (flutikazon i budezonid) i dupilumab koji se koristi u liječenju teških slučajeva ili ako je prisutno više alergijskih bolesti. Dilatacija jednjaka se izvodi kod liječenja striktura jednjaka koje uzrokuju disfagiju.

Zaključak: Iako se EoE sve češće dijagnosticira u gastroenterološkim i alergološkim ordinacijama, velik dio pacijenata još uvijek nema postavljenu dijagnozu. LOM ima najvažniju ulogu u ranom prepoznavanju simptoma i najbolje poznaje osobnu i obiteljsku anamnezu povezanu s pridruženim alergijskim bolestima. LOM može pravovremeno posumnjati na EoE i uputiti pacijenta na daljnju endoskopsku obradu kako bi se na vrijeme započelo liječenje te tako spriječile komplikacije bolesti i sačuvala kvaliteta života.

LITERATURA:

1. Dellon ES, Muir AB, Katzka DA, Shah SC, Sauer BG, Aceves SS, Furuta GT, Gonsalves N, Hirano I. ACG Clinical Guideline: Diagnosis and Management od Eosinophilic Esophagitis. The American Journal of Gastroenterology. January 2025;120:31-59. doi: 10.14309/ajg.0000000000003194
2. Dellon ES. Eosinophilic Esophagitis: Tips for the Primary Care Provider. Practical Gatroenterology. 2025 May:24-30
3. Amil-Dias J, Oliva S, Papadopoulou A, et al. Diagnosis and management of eosinophilic esophagitis in children: an update from the European Society for Paediatric Gastroenterology, Hepatology and Nutrition (ESPGHAN). J Pediatr Gastroenterol Nutr. 2024;1-44. doi:10.1002/jpn3.12188

Eosinophilic Esophagitis

Iva Obućina[1]

1. Zagreb Health Centre Centar

Keywords: eosinophilic esophagitis, alergies, family medicine physician
Correspondence address: Iva Obućina, Kauzlarićev prilaz 7, 10 000 Zagreb
E-mail: ivaboras@gmail.com
ORCID: 0009-0004-8965-5229

Introduction: Eosinophilic esophagitis (EoE) is a disease with a rapidly increasing incidence and prevalence that often remains unrecognized for a prolonged period. Its symptoms are nonspecific and overlap with those of gastroesophageal reflux disease (GERD); therefore, in clinical practice, it is frequently treated empirically with proton pump inhibitors (PPIs). The aim of this paper is to raise awareness of EoE by emphasizing careful evaluation of symptoms and associated conditions, in order to enable the family physician (FP) to promptly suspect this disease.

Discussion: EoE is a chronic, immune-mediated disease of the esophagus, with pathogenesis based on the interaction between allergens and the esophageal mucosa, ultimately resulting in inflammation, remodeling, and fibrosis. The diagnosis is based on symptoms of esophageal dysfunction and the presence of at least 15 eosinophils per high-power field in esophageal biopsy specimens, after exclusion of other disorders associated with esophageal eosinophilic infiltration (e.g. GERD, drug indiced hypersensitivity reactions, hipereosinophilic syndrome). At least six biopsy samples should be obtained from two different levels of the esophagus, as eosinophilic infiltrates are patchy in distribution. Endoscopic findings are described using the EoE Endoscopic Reference Score, which categorizes the presence of edema, rings, exudates, furrows, and strictures.

Between 60% and 80% of patients with EoE have at least one additional allergic condition, including food allergy, asthma, allergic rhinitis, and atopic dermatitis. In adolescents and adults, the most common symptoms are dysphagia and food impaction, with heartburn and chest pain also reported. In infants and young children, the disease presents with poor weight gain or failure to thrive, feeding difficulties, refusal of solid foods, and food aversion. In school-aged children, symptoms include abdominal pain, vomiting, regurgitation, and heartburn.

For improved evaluation of dysphagia, attention should be paid to compensatory behaviors developed by patients to alleviate symptoms, including drinking liquids with every bite, cutting food into small pieces or mashing food, prolonged meal duration, avoidance of meat and foods with a sticky consistency, excessive chewing, and avoidance of tablets.

Treatment includes management of the inflammatory process and treatment of fibrotic changes. Non-pharmacological therapy is based on the elimination of single or six dietary allergens, which include milk, eggs, wheat, nuts, soy, and seafood. Pharmacological treatment includes PPIs, whose therapeutic effect in EoE is mediated by mechanisms other than acid reflux suppression—an important point to emphasize to patients to improve adherence—as well as topical corticosteroids (fluticasone and budesonide) and dupilumab, which is used in severe cases or in the presence of multiple allergic diseases. Esophageal dilation is performed in the treatment of esophageal strictures causing dysphagia.

Conclusion: Although EoE is being diagnosed with increasing frequency in gastroenterology and allergy clinics, a substantial proportion of patients remain undiagnosed. The FP plays a crucial role in the early recognition of symptoms and is best acquainted with the patient's personal and family history of associated allergic diseases. Timely suspicion of EoE by the FP and referral for further endoscopic evaluation enable early initiation of treatment, thereby preventing disease-related complications and preserving quality of life.

REFERENCES:

1. Dellon ES, Muir AB, Katzka DA, Shah SC, Sauer BG, Aceves SS, Furuta GT, Gonsalves N, Hirano I. ACG Clinical Guideline: Diagnosis and Management od Eosinophilic Esophagitis. The American Journal of Gastroenterology. January 2025;120:31-59. doi: 10.14309/ajg.0000000000003194
2. Dellon ES. Eosinophilic Esophagitis: Tips for the Primary Care Provider. Practical Gatroenterology. 2025 May:24-30
3. Amil-Dias J, Oliva S, Papadopoulou A, et al. Diagnosis and management of eosinophilic esophagitis in children: an update from the European Society for Paediatric Gastroenterology, Hepatology and Nutrition (ESPGHAN). J Pediatr Gastroenterol Nutr. 2024;1-44. doi:10.1002/jpn3.12188

Frequency of risk factors for the occurence of noncommunicable diseases among the population of the city of Banja Luka

Nevena Todorovic[1], Natasa Pilipovic Broceta[1], Vedrana Antonic Kovljenovic[3], Mirela Kasabasic[4], Bankica Marković[5]

1. University in Banja Luka, Medical Faculty
2. Primary Healthcare Center "Dom zdravlja" in Banja Luka

Keywords: family medicine, noncommunicable diseases, prevention
Correspondence address: Sime Matavulja bb, Banja Luka 78000, Republika Srpska, Bosna i Hercegovina
E mail: nevena.todorovic@med.unibl.org
ORCID: Nevena Todorovic: 0000-0003-3973-5154
Natasa Pilipovic Broceta: 0000-0002-5038-1978
Vedrana Antonic Kovljenovic: 0009-0000-6433-6337
Mirela Kasabasic: 0009-0006-8075-3919
Brankica Markovic: 0000-0003-3617-5032

Introduction with aim: Primary health care organizes and implements preventive examinations aimed at identifying risk factors for mass noncommunicable diseases and ensuring the early detection of malignant diseases through the work of family medicine teams. The foundation for successful cardiovascular risk assessment in Bosnia and Herzegovina was established through the implementation of the European Guidelines on Cardiovascular Disease. Studies conducted by the Republic Institute of Public Health in 2002 and 2010 demonstrated a significant prevalence of risk factors for mass noncommunicable diseases in the Republic of Srpska. The aim of this paper is to determine the presence and prevalence of risk factors for chronic noncommunicable diseases among the population of the City of Banja Luka over a three-year period (elevated blood pressure, obesity, elevated total cholesterol and blood glucose levels, tobacco and alcohol use, and reduced physical activity). To analyze the characteristics of participants with elevated glycemic values.

Methods: The study included residents aged over 18 years. It was conducted at the Public Healthcare Center "Dom zdravlja" in Banja Luka from October 6, 2019 to December 31, 2022. The research was designed as an observational cross-sectional epidemiological study. A dedicated computer program was developed to support the implementation of preventive activities, along with an electronic filter for selecting participants based on age groups and medical characteristics. Following selection through the electronic filter, each family medicine team verified the accuracy of the obtained data by reviewing patients' electronic health records.

Inclusion criteria: Population over 18 years of age, both sexes, classified by age groups according to the principles of good medical practice.

Exclusion criteria:

- Individuals previously diagnosed with malignant diseases;
- Individuals previously diagnosed with cardiovascular diseases and diabetes mellitus;
- Pregnant women and women within six months postpartum;
- Individuals who had already undergone diagnostic procedures for the specified malignant diseases, cardiovascular diseases, or diabetes within the previous year.

Data collected during the study were analyzed using standard descriptive and inferential statistical methods, including univariate and multivariate analyses. The objective of this analysis was to identify statistically significant predictors among patients who, within the prevention project, simultaneously presented with pathological findings of glycemia, cholesterol, body mass index (BMI), and blood pressure.

Results: The study was included 8,955 citizens who met the inclusion criteria. Of the total number of preventive examinations, the largest proportion 67.7% was performed among participants aged 40–64 years. Preventive examinations among individuals younger than 29 years accounted for 8.1%, while 12.3% were conducted among those aged over 65 years. All results are presented in tables and graphs.

Conclusions: Risk factors for mass noncommunicable diseases are significantly present among the population of the City of Banja Luka, as at least one risk factor was identified in one-fifth of the participants. The most prevalent risk factors were abdominal obesity (elevated BMI and increased waist circumference) and hypercholesterolemia. Elevated glycemic values among participants were statistically significantly associated with age, elevated blood pressure, increased serum cholesterol levels, abdominal obesity, a positive fecal occult blood test, and lack of physical activity.

REFERENCES:

1. Expert Guidance for determination and reduction of risk factors and early diseses detection from Programme of prevention and control of non-communicable diseases in Republic of Srpska (Republic of Srpska Health Care Fund, 2003)
2. European Guidelines on CVD Prevention. Committee for Practice Guidelines to improve the quality of clinical practice and patients' care in Europe; 2012.
3. Petrović V. Characteristics of metabolic syndrome in adult population registered in Health Care Center in Banja Luka (doctoral disertation). University in Banja Luka, Medical Faculty. Banja Luka; 2015.
4. World Health Organization. Diabetes - Fact sheet number: 312 [Internet]. Geneva, Switzerland; 2015 [cited 2016 Feb 22]. Available from: http://www.who.int/mediacentre/factsheets/fs312/en/
5. World Health Organization. Noncommunicable diseases. www.who.int/news-room/fact-sheets/detail/ noncommunicable-diseases. Published April 13, 2021. Accessed January 18, 2022.

EQUAL-Health Erasmus+: Sustavni pristup unaprjeđenju kvalitete u primarnoj zdravstvenoj zaštiti

Uroš Zafošnik[1], Zalika Klemenc Ketiš[1], Ljubin Shurkiev[2], Biljana Tanevska Andonova[3], Katarina Stavrikj[3]

1. Primary healthcare research and development institute (IRROZ),SIM centre
2. Association of general practice/ family medicine of South-East Europe
3. Center for family medicine, Medical Faculty, Ss Cyril and Methodius, Skopje, North Macedonia

Ključne riječi: primarna zdravstvena zaštita; osiguranje kvalitete; simulacijska edukacija; trijaža; unaprjeđenje kvalitete; sigurnost pacijenata
Adresa za dopisivanje: Londonska 4/1-26, Skopje, North Macedonia
E adresa: btanevska2002@yahoo.com
ORCID: Uroš Zafošnik: 0000-0001-9334-2947
Zalika Klemenc Ketiš: 0000-0002-0270-1754
Ljubin Shukriev: 0000-0003-4625-8149
Biljana Tanevska Andonova: 0009-0001-0899-7525
Katarina Stavrikj: 0000-0002-8319-4554

Uvod s ciljem: Primarna zdravstvena zaštita (PZZ) odgovara na približno 80 % zdravstvenih potreba stanovništva; međutim, u jugoistočnoj Europi suočava se sa značajnim izazovima, uključujući fragmentirane sustave, nejednak pristup edukaciji i nedosljedne kliničke protokole, što negativno utječe na kvalitetu pružanja zdravstvene skrbi. Ove su nejednakosti posebno izražene u hitnim situacijama, gdje pravodobna, sigurna i visokokvalitetna skrb ima ključnu ulogu u ishodima liječenja pacijenata. Projekt EQUAL-Health Erasmus+, međunarodna inicijativa koja okuplja partnere iz Slovenije, Sjeverne Makedonije, Turske i Udruženja obiteljskih liječnika jugoistočne Europe, odgovara na ove izazove razvojem pravednog, troškovno učinkovitog i lokacijski neovisnog hibridnog modela edukacije za primarnu zdravstvenu zaštitu, s posebnim naglaskom na trijažu i sustavno osiguranje kvalitete.

Metode: Projekt se temelji na razvoju sustava osiguranja kvalitete u primarnoj zdravstvenoj zaštiti koji se temelji na procjeni rizika, a uključuje sustavnu procjenu rizika, identifikaciju obrazovnih potreba te razvoj i validaciju edukacije temeljene na simulacijama. Metodološki pristup je interdisciplinaran i interkulturan te integrira obrazovanje, zdravstvenu politiku i praktične alate za unaprjeđenje kvalitete zdravstvenih usluga. Zdravstveni djelatnici i edukatori osposobljavaju se za procjenu rizika, razvoj obrazovnih intervencija i primjenu načela unapređenja kvalitete (Quality Improvement – QI). Edukacija se provodi kroz strukturirane programe, radionice i e-learning module. Program se pilotira i kontinuirano unapređuje na temelju povratnih informacija sudionika. Paralelno se uspostavlja globalni repozitorij resursa za kvalitetu i učenje temeljeno na simulacijama.

Rezultati: Očekivani ishodi uključuju poboljšan pristup profesionalnoj edukaciji za zdravstvene radnike, smanjenje razlika u kvaliteti zdravstvene skrbi između urbanih i ruralnih sredina te jačanje kompetencija zdravstvenih timova u pružanju sigurne, pravedne i visokokvalitetne skrbi za pacijente. Poseban naglasak stavlja se na trijažu kao ključni mehanizam za raspodjelu zdravstvenih resursa i određivanje prioriteta u zbrinjavanju pacijenata. Projekt se također bavi komunikacijskim, kulturnim i jezičnim izazovima koji mogu utjecati na pravednost u liječenju pacijenata. EQUAL-Health doprinosi uspostavi regionalnih centara izvrsnosti, jača prekograničnu suradnju i podržava sustavna poboljšanja kvalitete zdravstvenih usluga.

Zaključak: EQUAL-Health predstavlja održiv i sveobuhvatan pristup unaprjeđenju kvalitete i pravednosti u primarnoj zdravstvenoj zaštiti. Projekt promatra trijažu ne samo kao klinički proces, već i kao društvenu i komunikacijsku praksu, naglašavajući važnost etičkih načela, kulturne kompetencije i jasne komunikacije između zdravstvenih djelatnika i pacijenata. Usklađen sa smjernicama Svjetske zdravstvene organizacije i europskim političkim ciljevima, projekt doprinosi razvoju otpornih zdravstvenih sustava te osigurava da geografska lokacija ne određuje kvalitetu zdravstvene skrbi niti ishode preživljavanja.

LITERATURA:

1. Salas E, Paige JT, Rosen MA. Creating new realities in healthcare: the status of simulation-based training as a patient safety improvement strategy. BMJ Quality & Safety. 2013;22(6):449–452.
2. Klemenc-Ketiš Z, Zafošnik U. Interprofessional education with simulations in primary care. Slovenian Journal of Public Health. 2024;63(1):1–4.
3. Zafošnik U, Cerovečki Nekić V, Stojnić N, Poženel Belec A, Klemenc-Ketiš Z. Developing a competency framework for training with simulations in healthcare: a qualitative study. BMC Medical Education. 2024;24:180.

EQUAL-Health Erasmus+: A Systemic Approach to Improving Quality in Primary Healthcare

Uroš Zafošnik[1], Zalika Klemenc Ketiš[1], Ljubin Shurkiev[2], Biljana Tanevska Andonova[3], Katarina Stavrikj[3]

1. Primary healthcare research and development institute (IRROZ), SIM centre
2. Association of general practice/ family medicine of South-East Europe
3. Center for family medicine, Medical Faculty, Ss Cyril and Methodius, Skopje, North Macedonia

Keywords: primary healthcare; quality assurance; simulation-based education; quality improvement; patient safety
Correspondence address: Londonska 4/1-26, Skopje, North Macedonia
E mail: btanevska2002@yahoo.com
ORCID: Uroš Zafošnik: 0000-0001-9334-2947
Zalika Klemenc Ketiš: 0000-0002-0270-1754
Ljubin Shukriev: 0000-0003-4625-8149
Biljana Tanevska Andonova: 0009-0001-0899-7525
Katarina Stavrikj: 0000-0002-8319-4554

Introduction with aim: Primary healthcare (PHC) addresses approximately 80% of the population's healthcare needs; however, in Southeast Europe it faces significant challenges, including fragmented systems, unequal access to training, and inconsistent clinical protocols, all of which negatively affect the quality of healthcare delivery. These disparities are particularly evident in emergency situations, where timely, safe, and high-quality care plays a crucial role in patient outcomes. The EQUAL-Health Erasmus+ project, an international initiative bringing together partners from Slovenia, North Macedonia, Turkey, and the Association of Family Physicians of Southeast Europe, responds to these challenges by developing an equitable, cost-effective, and location-independent hybrid training model for primary healthcare, with a special focus on triage and systematic quality assurance.

Methods: The project is based on the development of a risk-based quality assurance system in primary healthcare, which includes systematic risk assessment, identification of learning needs, and the development and validation of simulation-based training. The methodological approach is interdisciplinary and intercultural, integrating education, healthcare policy, and practical tools to improve the quality of healthcare services. Healthcare professionals and instructors are trained in risk assessment, the development of educational interventions, and the application of Quality Improvement (QI) principles. Training is delivered through structured programs, workshops, and e-learning modules. The program is pilot-tested and continuously refined based on participant feedback. In parallel, a global repository of quality and simulation-based learning resources is being established.

Results: Expected outcomes include improved access to professional education for healthcare workers, reduced disparities in quality of care between urban and rural settings, and enhanced competencies of healthcare teams in delivering safe, equitable, and high-quality patient care. Particular emphasis is placed on triage as a key mechanism for allocating healthcare resources and prioritizing patient care. The project also addresses communication, cultural, and language challenges that may influence equity in patient treatment. EQUAL-Health contributes to the establishment of regional centers of excellence, strengthens cross-border collaboration, and supports systematic improvements in the quality of healthcare services.

Conclusion: EQUAL-Health represents a sustainable and comprehensive approach to improving quality and equity in primary healthcare. The project views triage not only as a clinical process but also as a social and communication practice, highlighting the importance of ethical principles, cultural competence, and clear communication between healthcare professionals and patients. Aligned with World Health Organization guidelines and European policy objectives, the project contributes to the development of resilient healthcare systems and ensures that geographic location does not determine the quality of care or survival outcomes.

REFERENCES:

1. Salas E, Paige JT, Rosen MA. Creating new realities in healthcare: the status of simulation-based training as a patient safety improvement strategy. BMJ Quality & Safety. 2013;22(6):449–452.
2. Klemenc-Ketiš Z, Zafošnik U. Interprofessional education with simulations in primary care. Slovenian Journal of Public Health. 2024;63(1):1–4.
3. Zafošnik U, Cerovečki Nekić V, Stojnić N, Poženel Belec A, Klemenc-Ketiš Z. Developing a competency framework for training with simulations in healthcare: a qualitative study. BMC Medical Education. 2024;24:180.

Prevencija padova u starijoj životnoj dobi

Ana-Marija Virag[1]

1. Dom zdravlja Zagreb Zapad

Ključne riječi: prevencija, pad, starija dob, obiteljska medicina
Adresa za dopisivanje: Radnički dol 24, 10000 Zagreb
E adresa: anamarija.var@gmail.com
ORCID: 0000-0002-4221-5857

Uvod s ciljem: U starijoj životnoj dobi padovi su vodeći uzrok ozljeda i gubitka funkcionalnosti te važan uzrok morbiditeta i mortaliteta. Prema Svjetskoj zdravstvenoj organizaciji, godišnje pad doživi približno trećina osoba >65 godina te polovica osoba >80 godina. Posljedice variraju od manjih ozljeda (istegnuća, laceracije, hematomi) do teških trauma i prijeloma uz povećan rizik hospitalizacije, produljenog liječenja, funkcionalnog pada, institucionalizacije i smrtnog ishoda. Prema publikaciji Ozljede u Republici Hrvatskoj u 2023. godini, ozljede su četvrti uzrok smrti, a 41,4% svih ozljeda otpada na padove. Najčešći razlozi bolničkog zbrinjavanja nakon pada su prijelom kuka, traumatska ozljeda glave te prijelomi gornjih ekstremiteta i kralježnice. Uz somatske posljedice, padovi često uzrokuju strah od ponovnog pada i smanjenje aktivnosti, što povećava rizik recidiva. Cilj rada je prikazati preventivne mjere padova u starijoj dobi.

Rasprava: Padovi su posljedica interakcije bioloških (slabljenje vida i sluha, poremećaj ravnoteže, sporiji refleksi, smanjena koordinacija, sarkopenija), bihevioralnih (nedovoljna tjelesna aktivnost, nepravilna prehrana, alkohol, sjedilački stil, odbijanje pomagala te uporaba određenih lijekova) i/ili okolišnih čimbenika (slabo osvijetljeni prostori, skliske površine, prepreke na podu poput tepiha ili električnih kablova, predmeti ostavljeni na prolazu, stepenice bez rukohvata). U ordinaciji liječnika obiteljske medicine (LOM) preporučuje se oportunistički probir: aktivno ispitivanje o padovima i "skoro padovima", procjena hoda i ravnoteže te stratifikacija rizika (nizak/umjeren/visok). Najvažniji prediktor budućih padova je raniji pad. Brza procjena uključuje jednostavne testove (Romberg, tandem stav/hod, stajanje na jednoj nozi, test punog okreta, test ustajanja). Nestabilnost ili produljeno vrijeme izvedbe upućuju na potrebu intenzivnije prevencije. Kod niskog rizika naglasak je na osvještavanju mogućnosti pada i poticanju na redovitu tjelesnu aktivnost. Kod umjerenog i visokog rizika indicirana je procjena okolnosti ranijeg pada: detaljna anamneza, revizija lijekova, procjena komorbiditeta (uključujući osteoporozu, urinarnu inkontinenciju i kardiovaskularne bolesti), fizikalni pregled (hod/ravnoteža, neurološki i kognitivni status, snaga donjih ekstremiteta, vid, pregled stopala) te funkcionalna procjena (svakodnevne aktivnosti, subjektivna sposobnost, strah od pada). Preventivne mjere uključuju edukaciju pacijenta i obitelji: objašnjenje individualnih rizika, učenje sigurnih strategija kretanja (polagano ustajanje iz ležećeg/sjedećeg položaja, izbjegavanje žurbe, korištenje rukohvata, oprez pri stepenicama), poticanje prihvaćanja pomagala te naglašavanje važnosti kontinuirane aktivnosti radi prevencije dekondicioniranja.

Kontrola zdravstvenog stanja je drugi korak: kontrola glikemije i krvnog tlaka, korekcija vida i sluha, nadoknada vitamina D. U sklopu revizije farmakoterapije u obzir dolazi depreskripcija antihipertenziva, antidijabetika, sedativa i drugih psihoaktivnih lijekova kad je moguće. Okolišne intervencije uključuju reorganizaciju prostora, uklanjanje prepreka i tepiha, adekvatnu rasvjetu, rukohvate u kritičnim zonama, stabilnu protukliznu obuću te plan dostupnosti pomoći (telefon/alarm). Preporučuje se tjelesna aktivnost, 150–300 minuta tjedno umjerene aerobne aktivnosti uz trening ravnoteže, opsega pokreta i koordinacije. Svakodnevno brže hodanje predstavlja idealnu aktivnost uz alternative poput plivanja, vožnje bicikla, plesa i aerobika.

Zaključak: Prevencija padova zahtijeva individualiziran pristup. Stratifikacija rizika i jednostavni testovi hoda i ravnoteže omogućuju racionalno usmjeravanje intervencija. Iako su promjene starenja neizbježne, rizik je moguće značajno reducirati optimizacijom zdravstvenog stanja i farmakoterapije, ciljanim vježbama i prilagodbom okoline. Smanjenje stope padova doprinosi smanjenju hospitalizacija, morbiditeta i mortaliteta, a ključnu ulogu u implementaciji i praćenju mjera ima LOM.

LITERATURA:

1. Montero-Odasso M, van der Velde N, Martin FC, Petrovic M, Tan MP, Ryg J, Aguilar-Navarro S, i sur. World guidelines for falls prevention and management for older adults: a global initiative. Age Ageing. 2022 Sep 2;51(9):afac205.
2. Waldron N, Hill AM, Barker A. Falls prevention in older adults - assessment and management. Aust Fam Physician. 2012 Dec;41(12):930-5. PMID: 23210114.
3. Brkić Biloš I, Čukelj P, Benjak T, Draušnik Ž, Erceg M, Miahel S, i sur. Ozljede u Republici Hrvatskoj u 2023. godini [Internet]. Brkić Miloš I ur. Zagreb: Hrvatski zavod za javno zdravstvo; 2025 [pristupljeno 26.01.2026.] Dostupno na: https://www.hzjz.hr/wp-content/uploads/2025/03/Bilten-2023-objava.pdf
4. World Health Organization. Step safely: strategies for preventing and managing falls across the life-course. Geneva: World Health Organization; 2021.

Falls Prevention in Older Age

Ana-Marija Virag[1]

1. Health Centre Zagreb West

Keywords: Preventive Medicine, Falls, Elderly, Family Medicine
Correspondence address: Radnički dol 24, 10000 Zagreb
E mail: anamarija.var@gmail.com
ORCID: 0000-0002-4221-5857

Introduction with aim: In older age, falls are a leading cause of injury and loss of function, and a major contributor to morbidity and mortality. According to the World Health Organization, approximately one third of people aged >65 years and one half of those aged >80 years experience a fall each year. Consequences range from minor injuries (sprains, lacerations, hematomas) to severe trauma and fractures, with increased risk of hospitalization, prolonged treatment, functional decline, institutionalization, and death. According to the report Injuries in the Republic of Croatia in 2023, injuries are the fourth leading cause of death, and 41.4% of all injuries are due to falls. The most common reasons for hospital management after a fall are hip fracture, traumatic brain injury, and fractures of the upper extremities and spine. In addition to somatic consequences, falls often lead to fear of falling and reduced activity, which increases the risk of recurrence. The aim of this paper is to present preventive measures for falls in older adults.

Discussion: Falls result from the interaction of biological (decline in vision and hearing, impaired balance, slower reflexes, reduced coordination, sarcopenia), behavioural (insufficient physical activity, unhealthy diet, alcohol, sedentary lifestyle, refusal to use aids, and use of certain medications), and/or environmental factors (poor lighting, slippery surfaces, floor hazards such as rugs or electrical cords, objects left in walkways, staircases without handrails). In family medicine practice, opportunistic screening is recommended: actively asking about falls and "near falls," assessing gait and balance, and stratifying risk (low/moderate/high). The most important predictor of future falls is a previous fall. Rapid assessment can include simple tests (Romberg test, tandem stance/gait, single-leg stance, 360° turn test, chair-rise test). Instability or prolonged performance indicates a need for more intensive prevention. For low-risk individuals, emphasis is placed on increasing awareness of fall risk and encouraging regular physical activity. For moderate- and high-risk patients, assessment of the circumstances of previous falls is indicated, including a detailed history, medication review, evaluation of comorbidities (including osteoporosis, urinary incontinence, and cardiovascular disease), physical examination (gait/balance, neurological and cognitive status, lower-limb strength, vision, foot assessment), and functional assessment (activities of daily living, perceived ability, fear of falling). Preventive measures include patient and family education: explaining individual risks, teaching safe mobility strategies (slow transitions from lying/sitting to standing, avoiding rushing, using handrails, caution on stairs), encouraging acceptance of assistive devices, and emphasizing continuous activity to prevent deconditioning. Health status optimization is the next step: glycaemic and blood pressure control, correction of vision and hearing, and vitamin D supplementation. As part of medication optimisation, deprescribing antihypertensives, antidiabetic agents, sedatives, and other psychoactive drugs should be considered when feasible. Environmental interventions include reorganizing living space, removing obstacles and rugs, ensuring adequate lighting, installing handrails in critical areas, wearing stable non-slip footwear, and planning access to help (phone/alarm). Physical activity is recommended: 150–300 minutes per week of moderate aerobic activity combined with balance, range-of-motion, and coordination training. Daily brisk walking is an ideal activity, with alternatives such as swimming, cycling, dancing, and aerobics.

Conclusion: Falls prevention requires an individualized approach. Risk stratification and simple gait and balance tests enable rational targeting of interventions. Although age-related changes are unavoidable, risk can be substantially reduced by optimizing medical conditions and pharmacotherapy, using targeted exercises, and adapting the environment. Reducing falls decreases hospitalizations, morbidity, and mortality, and the family physician plays a key role in implementing and monitoring preventive measures.

REFERENCES:

1. Montero-Odasso M, van der Velde N, Martin FC, Petrovic M, Tan MP, Ryg J, Aguilar-Navarro S, i sur. World guidelines for falls prevention and management for older adults: a global initiative. Age Ageing. 2022 Sep 2;51(9):afac205.
2. Waldron N, Hill AM, Barker A. Falls prevention in older adults - assessment and management. Aust Fam Physician. 2012 Dec;41(12):930-5. PMID: 23210114.
3. Brkić Biloš I, Čukelj P, Benjak T, Draušnik Ž, Erceg M, Miahel S, i sur. Ozljede u Republici Hrvatskoj u 2023. godini [Internet]. Brkić Miloš I ur. Zagreb: Hrvatski zavod za javno zdravstvo; 2025 [pristupljeno 26.01.2026.] Dostupno na: https://www.hzjz.hr/wp-content/uploads/2025/03/Bilten-2023-objava.pdf
4. World Health Organization. Step safely: strategies for preventing and managing falls across the life-course. Geneva: World Health Organization; 2021.

Nacionalni preventivni programi – prednosti i nedostaci

Tea Vukušić[1]

1. Dom zdravlja Karlovačke županije, organizacijska jedinica Ozalj

Ključne riječi: rak, probir, nacionalni preventivni programi, sekundarna prevencija
Adresa za dopisivanje: Kolodvorska 2a, Ozalj
E adresa: vuktea04@gmail.com
ORCID: 0009-0003-2697-089X

Uvod s ciljem: Javnozdravstveni značaj raka kontinuirano raste zbog starenja populacije i povećane izloženosti okolišnim i životnim čimbenicima rizika. Uz primarnu prevenciju usmjerenu na smanjenje čimbenika rizika, ključno je pravodobno otkrivanje asimptomatskih ili ranih simptomatskih prekanceroznih stanja i raka kako bi se spriječila progresija u invazivnu bolest ili, u slučaju već razvijenog raka, smanjila smrtnost. Probir karcinoma (screening) označava sustavno ispitivanje naizgled zdravih osoba radi ranog otkrivanja raka ili njegovih predstadija prije pojave simptoma. Provodi se u asimptomatskoj populaciji primjenom jednostavnih, sigurnih i prihvatljivih testova s dokazanim učinkom na smanjenje smrtnosti. Cilj rada je prikazati aktualne nacionalne preventivne programe (NPP) te njihove ključne prednosti i potencijalna ograničenja u kliničkoj praksi.

Rasprava: Kao i u svijetu, i u Hrvatskoj je rak je drugi najčešći uzrok smrti. Trenutačno se u organizaciji Hrvatskog zavoda za javno zdravstvo provode nacionalni programi ranog otkrivanja raka dojke, kolorektalnog karcinoma i karcinoma pluća, dok se probir karcinoma prostate i vrata maternice provode u sklopu pilot-projekata. Kao nositelji kontinuiteta skrbi, liječnici obiteljske medicine (LOM) važna su komponenta u provođenju preventivnih aktivnosti pa tako i u provođenju NPP. Rano otkrivanje raka dojke provodi se kao organizirani populacijski probir žena u dobi 50–69 godina pozivom na mamografiju u dvogodišnjim intervalima. Probir kolorektalnog karcinoma provodi se u osoba u dobi 50–74 godine slanjem testa stolice na kućnu adresu, a osobe s pozitivnim nalazom upućuju se na dijagnostičku kolonoskopiju, nakon čega daljnju skrb preuzima sekundarna zdravstvena zaštita. Probir za prevenciju karcinoma pluća provode LOM preko nacionalne digitalne platforme identificirajući visokorizične pušače u dobi 50-74 godine i upućujući ih na niskodozni CT prsnog koša. Probir karcinoma prostate provodi se oportunistički u ambulantama LOM, individualnom procjenom rizika prema dobi, simptomima i obiteljskoj anamnezi, uz ili bez digitorektalnog pregleda, te upućivanju sumnjivih nalaza na daljnju urološku obradu. Pilot-projekt prevencije raka vrata maternice, koji uz Papa-test uključuje i HPV testiranje kao metodu probira žena u dobi 20–64 godine, trenutačno se provodi isključivo u Virovitičko-podravskoj županiji. Nedostatno razvijena informatizacija zdravstvenog sustava predstavlja tehnički izazov koji otežava komunikaciju između nositelja NP i LOM zbog čega se bolesnici s pozitivnim nalazima dobivenima oportunističkim probirom u okviru NPP-a (npr. mamografija ili test na okultno krvarenje u stolici) ne mogu automatski uključiti u organizirani probir, već se upućuju na daljnju dijagnostičku obradu redovitim putem. Provedbu programa dodatno otežavaju klinički i organizacijski izazovi, uključujući psihičku i fizičku nelagodu povezanu s metodama probira i obradom pozitivnih nalaza te posljedice pretjerane dijagnostike i liječenja, poput otkrivanja pretkliničkih i prekanceroznih lezija, nepotrebnih terapijskih zahvata te lažno pozitivnih i lažno negativnih rezultata probira, što istodobno otvara etička pitanja usklađivanja načela dobrobiti i neškodljivosti s poštivanjem autonomije bolesnika i osiguravanjem informiranog pristanka.

Zaključak: NPP imaju ključnu ulogu u smanjenju smrtnosti od raka i predstavljaju temelj sekundarne prevencije, a njihova učinkovitost ovisi o kvalitetnoj provedbi, informiranosti građana i aktivnoj ulozi LOM. Pritom je važno prepoznati tehničke, kliničke i organizacijske izazove te osigurati ravnotežu između koristi i mogućih štetnih posljedica kako bi se programi kontinuirano unaprjeđivali i prilagođavali stvarnim potrebama kliničke prakse.

LITERATURA:

1. Hrvatski zdravstveno statistički ljetopis za 2022. godinu. Hrvatski zavod za javno zdravstvo 2023.
2. Republika Hrvatska. Ministarstvo zdravstva. https://zdravlje.gov.hr/nacionalni-preventivni-programi/1760
3. Bergman-Marković B, Diminić Lisica I, Katić M, i suradnici. Smjernice u praksi obiteljskog liječnika. 2., dopunjeno i obnovljeno izdanje. Zagreb: Medicinska naklada; 2025.

National Preventive Programs – Advantages and Limitations

Tea Vukušić[1]

1. Primary Health Care Center of Karlovac County, Organizational Unit Ozalj

Keywords: cancer, screening, national preventive programs, secondary prevention
Correspondence address: Kolodvorska 2a, Ozalj
E mail: vuktea04@gmail.com
ORCID: 0009-0003-2697-089X

Introduction with aim: The public health burden of cancer is increasing due to population ageing and greater exposure to environmental and lifestyle-related risk factors. Alongside primary prevention aimed at reducing these risks, timely detection of asymptomatic or early symptomatic precancerous conditions and cancer is essential to prevent progression to invasive disease or, in cases of established cancer, to reduce mortality. Cancer screening refers to the systematic examination of apparently healthy individuals for the early detection of cancer or its precursors before the onset of symptoms. Screening is conducted in asymptomatic populations using simple, safe, and acceptable tests with proven effectiveness in reducing cancer-related mortality. The aim of this paper is to present current national preventive programmes (NPPs) in Croatia and to highlight their main advantages and limitations in clinical practice.

Discussion: Like worldwide, cancer is the second leading cause of death in Croatia. National programmes for the early detection of breast, colorectal, and lung cancer are organised by the Croatian Institute of Public Health, while screening for prostate and cervical cancer is conducted within pilot projects. Family physicians (FPs), as providers of continuous care, play a key role in preventive activities and in the implementation of NPPs. Breast cancer screening is performed as an organised population-based programme for women aged 50–69 years, who are invited for mammography every two years. Colorectal cancer screening targets individuals aged 50–74 years through faecal occult blood testing distributed to home addresses; individuals with positive results are referred for diagnostic colonoscopy and subsequent secondary care. Lung cancer screening is conducted by FPs via a national digital platform, identifying high-risk smokers aged 50–74 years and referring them for low-dose chest computed tomography. Prostate cancer screening is carried out opportunistically in FP practices through individual risk assessment based on age, symptoms, and family history, with or without digital rectal examination, followed by referral of suspicious findings for urological evaluation. A pilot cervical cancer prevention programme, incorporating Pap testing and HPV testing for women aged 20–64 years, is currently implemented exclusively in Virovitica–Podravina County. Limited healthcare system informatisation represents a significant technical challenge, restricting communication between NPP coordinators and FPs. Consequently, patients with positive findings obtained through opportunistic screening cannot be automatically integrated into organised screening pathways and are instead referred for further diagnostic procedures through standard clinical routes. Programme implementation is further complicated by clinical and organisational challenges, including psychological and physical discomfort related to screening procedures and the evaluation of positive findings, as well as the consequences of overdiagnosis and overtreatment, such as unnecessary interventions and false-positive or false-negative results, raising ethical concerns about balancing beneficence and non-maleficence with respect for patient autonomy and informed consent.

Conclusion: National preventive programmes are a cornerstone of secondary cancer prevention and play an essential role in reducing cancer-related mortality. Their effectiveness depends on high-quality implementation, public awareness, and the active involvement of family physicians. Recognising technical, clinical, and organisational challenges and maintaining a balance between benefits and potential harms are crucial for the continuous improvement of screening programmes and their adaptation to routine clinical practice.

REFERENCES:

1. Hrvatski zdravstveno statistički ljetopis za 2022. godinu. Hrvatski zavod za javno zdravstvo 2023.
2. Republika Hrvatska. Ministarstvo zdravstva. https://zdravlje.gov.hr/nacionalni-preventivni-programi/1760
3. Bergman-Marković B, Diminić Lisica I, Katić M, i suradnici. Smjernice u praksi obiteljskog liječnika. 2., dopunjeno i obnovljeno izdanje. Zagreb: Medicinska naklada; 2025.

Procjena rizika raka prostate u obiteljskoj medicini

Željko Vojvodić[1]

1. Ordinacija obiteljske medicine „Željko Vojvodić, dr med“

Adresa za dopisivanje: Bijelo Brdo, N. Tesle 67
E adresa: vojvodic58@gmail.com
ORCID: 0000-0001-5215-1255

Uvod s ciljem Rak prostate je jedan od najčešćih sijela zloćudnih tumora u muškaraca. U Hrvatskoj je u 2023. s 2927 slučajeva na prvom mjestu uzroka obolijevanja od raka u muškaraca, s incidencijom od 143/100 000, i smrtnošću 43/100 000. U SAD je preko 70% oboljelih iznad 65 godina. Muškarac u 50-tim godinama ima u SAD 42 % rizik otkrivanja histološki sumnjivih promjena do kraja života, 9,5 % rizik obolijevanja od invazivnog oblika raka, te 2,9 % rizik smrti od ove bolesti. Cilj rada je pregled glavnih preporuka uroloških smjernica o postupcima ranog otkrivanja, s naglaskom na problematiku nedostatne preciznosti i izbjegavanje prekomjernog dijagnosticiranja.

Rasprava Procjena rizika za rak prostate počinje anamnezom i digitorektalnim pregledom (DRP). U ranim stadijima je asimptomatski, a u razvijenijim stadijima se simptomi u biti ne razlikuju od onih s dobroćudnom hiperplazijom. Rizik obolijevanja se povećava iznad 50. godine, dok je u osoba s oboljelim bliskim rođakom u anamnezi rizik povećan već iznad 45. godine. Za rano otkrivanje ne postoji univerzalno prihvaćena strategija probira. Opsežne epidemiološka istraživanja početkom ovog tisućljeća istaknule su značaj kombiniranja prostata-specifičnog antigena (PSA) i DRP u ranom otkrivanju, što je prihvaćeno i u većini tadašnjih međunarodnih smjernica. Novije pak meta analize ukazuju na značajno nižu dijagnostičku vrijednost DRP, bilo kao samostalne metode probira, bilo u kombinaciji s PSA.

PSA je i dalje najčešće korišteni dijagnostički instrument u praksi, ali nedovoljno pouzdan kao samostalna metoda probira zbog niske senzitivnosti (pri graničnoj vrijednosti 4 ng/mL: 20 – 30 %), uz specifičnost oko 90 %. Na razine PSA utječu benigno uvećanje prostate, infekcije donjih mokraćnih puteva, spolna aktivnost, lijekovi (testosteron supstitucijska terapija, kortikosteroidi, tiazidski diuretici), te neki rekreativni sportovi. Njemački Institut za kvalitet i efikasnost (njem. Institut für Qualität und Wirtschaftlichkeit) zaključuje 2019.g. kako korist probira isključivo pomoću PSA ne premašuje štetne posljedice prekomjernog dijagnosticiranja, dok britanski Nacionalni odbor za probir (engl. National Screening Committee) u 2020.g. preporučuje izbjegavanje masovnog probira samo ovom metodom. Transabdominalni ultrazvuk (TAUZ) prostate još nije prihvaćen kao metoda probira, bilo samostalno, bilo u kombinaciji s PSA, jer nije validiran u protokolima probira i nema utvrđenu dijagnostičku preciznost. Ipak, u novijim radovima se mjerenje volumena prostate te parametra PSA gustoće (engl. PSA density) pomoću TAUZ ističe kao korisna metoda u sklopu individualne procjene rizika, pri čemu su rezultati mjerenja TAUZ usporedivi s transrektalnim ultrazvukom (TRUS). U recentnim istraživanjima manjeg opsega senzitivnost PSA gustoće, pri graničnoj vrijednosti od 0,20 ng/ml/cc, doseže 70 %, specifičnost do 80 %.

Zaključak Učinkovita procjena rizika u obiteljskoj medicini je skup postupaka i prosudbi temeljenih na individualiziranoj evaluaciji, jasnoj i otvorenoj komunikaciji između liječnika i pacijenta, te zajedničkom donošenju odluka. PSA je i dalje glavni dijagnostički test u okviru individualne procjene, ali relativno nepouzdan u pogledu izbjegavanja invazivnih dijagnostičkih metoda (biopsije prostate). TAUZ je, pak, sve prisutniji među obiteljskim liječnicima kao dijagnostičko sredstvo, te, iako još neprihvaćen kao metoda probira, educiranom liječniku pruža više podataka od DRP (orijentacijsku veličinu prostate, strukturu, oblik, volumen), u okviru individualne procjene rizika.

LITERATURA:

1. Van Poppel H, Albreht T, Basu P, Hogenhout R, Collen S, Roobol M. Serum PSA-based early detection of prostate cancer in Europe and globally: past, present and future. Nat Rev Urol. 2022 Sep;19(9):562-572. doi: 10.1038/s41585-022-00638-6.
2. Matsukawa A, Yanagisawa T, Bekku K, Kardoust Parizi M, Laukhtina E, Klemm J, et al. Comparing the Performance of Digital Rectal Examination and Prostate-specific Antigen as a Screening Test for Prostate Cancer: A Systematic Review and Meta-analysis. Eur Urol Oncol. 2024;7(4):697-704. doi: 10.1016/j.euo.2023.12.005.
3. De Vos I, Drost FJH, Bokhorst LP, Alberts AR, van Gelder M, et al. Prostate cancer risk assessment by the primary care physician and urologist: transabdominal- versus transrectal ultrasound prostate volume-based use of the Rotterdam Prostate Cancer Risk Calculator. Transl Androl Urol 2023;12(2):241-248. https://dx.doi.org/10.21037/tau-22-640.
4. Shareef S, Joshi, A. Effectiveness of transabdominal ultrasonography in assessing benign versus malignant nature of prostatomegaly. Int J Res Med Sciences, 2019; 7(6), 2297–2301. https://doi.org/10.18203/2320-6012.ijrms20192516
5. Kurucz LM, Natali T, Westerhout S, Hagens M, Visser JJ, van Muilekom EAM, et al. Prostate Volume and PSA-Density Estimation by Transabdominal Ultrasound: Prospective Evidence of Comparative Accuracy to MRI and Transrectal Ultrasound in Prostate Cancer Early Diagnostics. Prostate. 2025; 5(16):1488-1496. doi: 10.1002/pros.70036.

Extended Abstract
Free topics

Prostate cancer risk assessment in family medicine

Željko Vojvodić[1]

1. Family Practice „Željko Vojvodić, dr med“

Correspondence address: Bijelo Brdo, N. Tesle 67
E mail: vojvodic58@gmail.com
ORCID: 0000-0001-5215-1255

Introduction with aim. Prostate cancer is one of the most common malignant tumors in men. In Croatia in 2023, with 2,927 cases, it is the leading cause of morbidity from cancer in men, with an incidence of 143/100,000, and a mortality rate of 43/100,000. In the USA, over 70% of patients are over 65 years old. A man in his 50s in the USA has a 42% risk of detecting histologically suspicious changes at the end of his life, a 9.5% risk of developing an invasive form of cancer, and a 2.9% risk of dying from this disease. The aim of the paper is to review the main recommendations of urological guidelines on early detection procedures, with an emphasis on the issue of insufficient precision and avoiding overdiagnosis.

Discussion. Risk assessment for prostate cancer begins with a medical history and digital rectal examination (DRP). In the early stages, it is asymptomatic, and in the more developed stages, the symptoms are basically no different from those of benign hyperplasia. The risk of getting the disease increases above the age of 50, while the risk increases already above the age of 45 in persons with a history of the disease in a close relative. There is no universally accepted screening strategy for early detection. Extensive epidemiological studies at the beginning of this millennium highlighted the importance of combining prostate-specific antigen (PSA) and DRP in early detection, which was also accepted in most international guidelines at the time. More recent meta-analyses indicate a significantly lower diagnostic value of DRP, either as an independent screening method or in combination with PSA. PSA is still the most commonly used diagnostic tool in practice, but is not reliable enough as a stand-alone screening method due to its low sensitivity (at a cut-off value of 4 ng/mL: 20–30%), with a specificity of around 90%. PSA levels are affected by benign prostatic hyperplasia, lower urinary tract infections, sexual activity, medications (testosterone replacement therapy, corticosteroids, thiazide diuretics), and some recreational sports. The German Institute for Quality and Efficiency (Institut für Qualität und Wirtschaftlichkeit) concluded in 2019 that the benefits of screening solely with PSA do not outweigh the harmful consequences of overdiagnosis, while the British National Screening Committee in 2020 recommended avoiding mass screening with this method alone. Transabdominal ultrasound (TAUS) of the prostate has not yet been accepted as a screening method, either alone or in combination with PSA, because it has not been validated in screening protocols and has no established diagnostic accuracy. However, in recent works, the measurement of prostate volume and the PSA density parameter using TAUS stands out as a useful method as part of individual risk assessment, where the results of TAUS measurement are comparable to transrectal ultrasound (TRUS). In recent smaller studies, the sensitivity of PSA density, at a cut-off value of 0.20 ng/ml/cc, reaches 70%, and the specificity reaches 80%.

Conclusion Effective risk assessment in family medicine is a set of procedures and judgments based on individualized evaluation, clear and open communication between doctor and patient, and joint decision-making. PSA is still the main diagnostic test within the individual assessment, but relatively unreliable in terms of avoiding invasive diagnostic methods (prostate biopsy). TAUS, on the other hand, is increasingly present among family physicians as a diagnostic tool, and although not yet accepted as a screening method, it provides an educated physician with more data than DRP (orientational prostate size, structure, shape, volume), within the framework of individual risk assessment.

REFERENCES:

1. Van Poppel H, Albreht T, Basu P, Hogenhout R, Collen S, Roobol M. Serum PSA-based early detection of prostate cancer in Europe and globally: past, present and future. Nat Rev Urol. 2022 Sep;19(9):562-572. doi: 10.1038/s41585-022-00638-6.
2. Matsukawa A, Yanagisawa T, Bekku K, Kardoust Parizi M, Laukhtina E, Klemm J, et al. Comparing the Performance of Digital Rectal Examination and Prostate-specific Antigen as a Screening Test for Prostate Cancer: A Systematic Review and Meta-analysis. Eur Urol Oncol. 2024;7(4):697-704. doi: 10.1016/j.euo.2023.12.005.
3. De Vos I, Drost FJH, Bokhorst LP, Alberts AR, van Gelder M, et al. Prostate cancer risk assessment by the primary care physician and urologist: transabdominal- versus transrectal ultrasound prostate volume-based use of the Rotterdam Prostate Cancer Risk Calculator. Transl Androl Urol 2023;12(2):241-248. https://dx.doi.org/10.21037/tau-22-640.
4. Shareef S, Joshi, A. Effectiveness of transabdominal ultrasonography in assessing benign versus malignant nature of prostatomegaly. Int J Res Med Sciences, 2019; 7(6), 2297–2301. https://doi.org/10.18203/2320-6012.ijrms20192516
5. Kurucz LM, Natali T, Westerhout S, Hagens M, Visser JJ, van Muilekom EAM, et al. Prostate Volume and PSA-Density Estimation by Transabdominal Ultrasound: Prospective Evidence of Comparative Accuracy to MRI and Transrectal Ultrasound in Prostate Cancer Early Diagnostics. Prostate. 2025; 5(16):1488-1496. doi: 10.1002/pros.70036.

Kronični kašalj u starijih osoba u ordinaciji obiteljske medicine: diferencijalno-dijagnostički pristup u post-COVID razdoblju

Zvonimir Bosnić[1]

1. Katedra za obiteljsku medicinu, Medicinski fakultet u Osijeku

Ključne riječi: kronični kašalj, diferencijalna dijagnoza, starije osobe, slikovne metode
Adresa za dopisivanje: Zvonimir Bosnić, J. Huttlera 4, Osijek
E adresa: zbosnic191@gmail.com
ORCID: 0000-0002-4101-9782

Uvod s ciljem: Kronični kašalj (≥8 tjedana prema smjernicama (eng. European Respiratory Society) jedan je od najčešćih razloga dolaska pacijenata u ordinaciju obiteljske medicine te pogađa 5–10% odrasle populacije. U starijoj dobi prevalencija je veća zbog multimorbiditeta i polifarmacije, a simptomi značajno narušavaju kvalitetu života (poremećaj sna, umor, inkontinenciju i socijalnu izolaciju). Nakon pandemije bolesti COVID-19 sve se češće susreće perzistirajući kašalj u sklopu produljenog COVID-a, definiranog kao prisutnost simptoma ≥12 tjedana nakon akutne infekcije prema Svjetskoj zdravstvenoj organizaciji. Nije razjašnjeno predstavlja li post-COVID kašalj novi patofiziološki entitet ili pogoršanje postojećih mehanizama preosjetljivosti dišnih putova. Cilj rada je, na temelju narativnog pregleda literature i aktualnih smjernica, prikazati strukturirani diferencijalno-dijagnostički pristup kroničnom kašlju u starijih osoba u primarnoj zdravstvenoj zaštiti, s posebnim osvrtom na post-COVID kontekst.

Rasprava: Najčešći uzroci kroničnog kašlja i dalje su sindrom gornjih dišnih putova, astma i gastroezofagealna refluksna bolest. U starijih bolesnika nužno je razmotriti nuspojave lijekova (osobito ACE-inhibitora), kroničnu opstruktivnu plućnu bolest, intersticijske bolesti pluća te druge rjeđe uzroke. Post-COVID kašalj povezuje se s perzistirajućom upalom i neurogenom preosjetljivošću, često uz uredan radiološki nalaz. Dokazi su pretežno temeljeni na opservacijskim istraživanjima, a jasni algoritmi za primarnu zdravstvenu zaštitu (PZZ) još nisu standardizirani. Stoga postoji rizik prekomjerne dijagnostike i nepotrebnog upućivanja na slikovne pretrage. Sustavan pristup koji započinje detaljnom anamnezom, fizikalnim pregledom, procjenom terapije i osnovnom funkcijskom obradom omogućuje racionalno zbrinjavanje većine bolesnika u PZZ.

Zaključak: Post-COVID razdoblje dodatno komplicira diferencijalnu dijagnozu kroničnog kašlja u starijih bolesnika, ali temeljni principi racionalne obrade ostaju nepromijenjeni. Anamneza, fizikalni pregled i testovi plućne funkcije ostaju temelj obrade kroničnog kašlja u primarnoj zdravstvenoj zaštiti. Rendgensko snimanje pluća indicirano je u nejasnim ili alarmantnim slučajevima, dok se rutinska primjena CT-a ne preporučuje. U post-COVID razdoblju osobitu važnost ima longitudinalno praćenje bolesnika te koordinacijska uloga liječnika obiteljske medicine u racionalnoj dijagnostici i pravodobnom upućivanju specijalistu.

LITERATURA:

1. Visca D, Beghè B, Fabbri LM, Papi A, Spanevello A. Management of chronic refractory cough in adults. Eur J Intern Med. 2020;81:15-21.
2. Chung KF, Pavord ID. Prevalence, pathogenesis, and causes of chronic cough. Lancet. 2008;371(9621):1364-1374.
3. Chetupalli SR, Krishnan P, Sharma N, et al. Multi-Modal Point-of-Care Diagnostics for COVID-19 Based on Acoustics and Symptoms. IEEE J Transl Eng Health Med. 2023;11:199-210.

Chronic Cough in Older Adults in Primary Care: A Differential Diagnostic Approach in the Post-COVID Era

Zvonimir Bosnić[1]

1. Department of Family Medicine, Faculty of Medicine Osijek, J.J. Strossmayer University of Osijek

Keywords: chronic cough, differential diagnosis, elderly, imaging methods
Correspondence address: J.Huttlera 4, Osijek
E mail: zbosnic191@gmail.com
ORCID: 0000-0002-4101-9782

Introduction with aim: Chronic cough (≥8 weeks according to the guidelines of the European Respiratory Society) is one of the most common reasons for visits to family physicians and affects 5–10% of the adult population. Its prevalence is higher in older adults due to multimorbidity and polypharmacy, and symptoms significantly impair quality of life (sleep disturbance, fatigue, urinary incontinence, and social isolation). Following the COVID-19 pandemic, persistent cough has increasingly been observed as part of post-COVID condition, defined as symptoms lasting ≥12 weeks after acute infection according to the World Health Organization. It remains unclear whether post-COVID cough represents a distinct pathophysiological entity or an exacerbation of pre-existing airway hypersensitivity mechanisms. The aim of this paper, based on a narrative review of the literature and current guidelines, is to present a structured differential diagnostic approach to chronic cough in older adults in primary care, with particular emphasis on the post-COVID context.

Discussion: The most common causes of chronic cough remain upper airway cough syndrome, asthma, and gastroesophageal reflux disease. In older patients, adverse drug reactions (especially ACE inhibitors), chronic obstructive pulmonary disease, interstitial lung diseases, and other less common conditions must also be considered. Post-COVID cough has been associated with persistent inflammation and neurogenic hypersensitivity, often in the presence of normal radiological findings. Current evidence is largely based on observational studies, and clear primary care algorithms have not yet been standardized. Consequently, there is a risk of overdiagnosis and unnecessary referral for imaging studies. A systematic approach beginning

Conclusion: The post-COVID era further complicates the differential diagnosis of chronic cough in older adults; however, the fundamental principles of rational evaluation remain unchanged. Longitudinal follow-up and the coordinating role of the family physician are essential for safe and effective care.

REFERENCES:

1. Visca D, Beghè B, Fabbri LM, Papi A, Spanevello A. Management of chronic refractory cough in adults. Eur J Intern Med. 2020;81:15-21.
2. Chung KF, Pavord ID. Prevalence, pathogenesis, and causes of chronic cough. Lancet. 2008;371(9621):1364-1374.
3. Chetupalli SR, Krishnan P, Sharma N, et al. Multi-Modal Point-of-Care Diagnostics for COVID-19 Based on Acoustics and Symptoms. IEEE J Transl Eng Health Med. 2023;11:199-210.

Postpartalna hipertenzija - Uloga obiteljskog liječnika u ranom prepoznavanju, liječenju i dugoročnoj prevenciji kardiovaskularnog rizika

Lea Klepač[1]

1. Dom zdravlja Zagreb – Centar, Zagreb, Hrvatska

Ključne riječi: hipertenzija, mjerenje krvnog tlaka, preeklampsija, postpartum, kardiovaskularni
E adresa: klepaclea@gmail.com
ORCID: 0000-0002-6801-9715

Uvod s ciljem Hipertenzivni poremećaji u trudnoći i postpartumu globalno se javljaju u 5-10% trudnoća i predstavljaju značajan uzrok maternalnog morbiditeta. Postpartalna hipertenzija (PH) javlja se u prvih šest tjedana nakon poroda i obuhvaća tri klinička stanja: perzistentnu gestacijsku hipertenziju, novonastalu postpartalnu hipertenziju te postpartalnu preeklampsiju (PP). Prema međunarodnim podatcima procjenjuje se da se javlja kao komplikacija 2% trudnoća. Simptomi su nerijetko nespecifični i pogrešno se pripisuju uobičajenom postpartalnom oporavku što dovodi do kašnjenja u dijagnostici i liječenju. Kako odgovornost za kontinuiranu zdravstvenu skrb prelazi iz rodilišta u primarnu zdravstvenu zaštitu, liječnici obiteljske medicine (LOM) imaju ključnu ulogu u ranom prepoznavanju komplikacija i procjeni dugoročnog kardiovaskularnog rizika (KVR) rodilja. Cilj ovog rada je prikazati kliničke značajke postpartalne hipertenzije te istaknuti ulogu LOM u njezinom zbrinjavanju i dugoročnoj prevenciji kardiovaskularnih bolesti.

Metode Pretraživane su baze PubMed i Google Scholar koristeći pojmove „postpartum hypertension“, „hypertensive disorders of pregnancy“, „cardiovascular risk“, „family physician“. Uključene su meta-analize, pregledni radovi i smjernice objavljene u razdoblju 2022.-2026. godine, s naglaskom na terapijske mogućnosti i preporuke za praćenje u primarnoj zdravstvenoj zaštiti.

Rasprava Većinu slučajeva PH čine perzistentna hipertenzija nakon gestacijske hipertenzije ili preeklampsije. Manji broj čini novonastala hipertenzija koja se tipično javlja pet do sedam dana nakon poroda i u većini slučajeva spontano regredira do kraja babinja, dok je PP iznimno rijetka. U ranom postpartalnom razdoblju, preporuča se redovito kućno mjerenje arterijskog tlaka uz kontrolni pregled LOM-a unutar 10 dana od poroda. Uz edukaciju pacijentice o alarmantnim simptomima PP, u slučaju sumnje na komplikacije potrebno je učiniti laboratorijsku obradu i pravodobno uključiti sekundarnu razinu skrbi. Liječenje zahtijeva individualizirani pristup uzimajući u obzir dojenje i komorbiditete rodilje. Nakon poroda preporuča se primjena inhibitora kalcijevih kanala ili inhibitora angiotenzin konvertirajućeg enzima (ACEi). Iako su ACEi kontraindicirani u trudnoći, u postpartumu se smatraju sigurnom terapijskom opcijom. Kao terapija drugog izbora preporuča se uvođenje fiksne kombinacije ACEi/inhibitora kalcijevih kanala uz mogućnost uvođenja beta-blokatora, pri čemu se daje prednost labetalolu ili metoprololu. Primjena diuretika se ne preporuča zbog mogućeg smanjenja laktacije pri višim dozama. Metildopa se rjeđe koristi zbog pretpostavljenog povećanja rizika postpartalne depresije, no za to nema čvrstih dokaza. Nekoliko istraživanja povezalo je dojenje nakon preeklampsije s nižim dugoročnim rizikom razvitka hipertenzije, što dodatno naglašava potrebu za individualnim terapijskim pristupom koji podržava laktaciju kada god je to moguće. Postporođajno razdoblje predstavlja ključno razdoblje za prevenciju dugoročnog KVR rodilja s PH zbog povećanog rizika razvoja kronične hipertenzije i kardiovaskularnih bolesti. Međunarodne smjernice preporučaju provođenje strukturiranog postpartalnog probira u intervalima od šest do 12 tjedana, šest mjeseci i godinu dana nakon poroda, uz procjenu čimbenika rizika, savjetovanje o zdravim životnim navikama te pravodobnu dodatnu obradu i daljnje preventivne intervencije.

Zaključak PH predstavlja klinički izazov zbog nespecifične prezentacije i prijelaza skrbi u primarnu zdravstvenu zaštitu. LOM u postpartumu ima središnju i nezamjenjivu ulogu u ranom prepoznavanju, odabiru antihipertenzivne terapije te dugoročnom smanjenju KVR kroz kontinuiranu skrb, individualni pristup i sustavno praćenje kardiovaskularnih rizika. Proaktivan, individualiziran pristup uz edukaciju rodilja i suradnju s ginekologom predstavlja temelj dugoročnog očuvanja zdravlja pacijentica.

LITERATURA:

1. Kumar NR, Hirshberg A, Srinivas SK. Best Practices for Managing Postpartum Hypertension. Curr Obstet Gynecol Rep. 20. lipanj 2022.;11(3):159–68.
2. Countouris M, Mahmoud Z, Cohen JB, Crousillat D, Hameed AB, Harrington CM, i ostali. Hypertension in Pregnancy and Postpartum: Current Standards and Opportunities to Improve Care. Circulation. 18. veljača 2025.;151(7):490–507.
3. McCoy SM, Hurwitz M, Kwapong YA, Bircan E, Spitz JA, Dastmalchi LN, i ostali. Advances in postpartum hypertension management: a review of current guidelines and interventions. Npj Womens Health. 06. kolovoz 2025.;3(1):47.
4. Irfan A, Haider SH, Sheikh SM, Larik MO, Abbas M, Hashmi MR. Evaluation of antihypertensives for post partum management of hypertensive disorders of pregnancy: A systematic review and meta-analysis. Curr Probl Cardiol. kolovoz 2024.;49(8):102584.

Postpartum Hypertension - The Role of the Family Physician in Early Diagnosis, Treatment, and Long-Term Prevention of Cardiovascular Risk

Lea Klepač[1]

1. Zagreb – Center Health Center, Zagreb, Croatia

Keywords: Hypertension, Blood Pressure Monitoring, Preeclampsia, Postpartum, Cardiovascular Risk
E mail: klepaclea@gmail.com
ORCID: 0000-0002-6801-9715

Introduction and aim Hypertensive disorders in pregnancy and the postpartum period occur in 5–10% of pregnancies worldwide and represent a significant cause of maternal morbidity. Postpartum hypertension (PH) occurs within the first six weeks after delivery and includes three clinical entities: persistent hypertension following gestational hypertension, newly developed (de novo) postpartum hypertension, and postpartum preeclampsia (PP). According to international epidemiological data, PH affects approximately 2% of pregnancies. Symptoms are often nonspecific and mistakenly attributed to normal postpartum recovery, leading to delayed diagnosis and treatment. As ongoing care shifts from the maternity ward to primary care, family physicians (FPs) are essential for early recognition of complications and evaluation of long-term cardiovascular risk (CVR) in postpartum women. The aim of this paper is to present the clinical features of postpartum hypertension and to highlight the role of the FP in its management and in the long-term prevention of cardiovascular disease.

Methods PubMed and Google Scholar databases were searched using the terms “postpartum hypertension,” “hypertensive disorders of pregnancy,” “cardiovascular risk,” and “family physician.” Meta-analyses, review articles, and clinical guidelines published between 2022 and 2026 were included, with a focus on therapeutic approaches and follow-up recommendations in primary care.

Discussion Most cases of PH represent persistent hypertension following gestational hypertension or preeclampsia. A smaller proportion consists of de novo hypertension, which typically develops five to seven days after delivery and in most cases resolves spontaneously by the end of the puerperium. PP is extremely rare. The early postpartum period requires structured follow-up. Regular home blood pressure monitoring is recommended, along with a follow-up visit with the FP within 10 days postpartum. Patient education regarding warning signs of PP is essential. In cases of suspected complications, laboratory evaluation should be performed and if necessary, arrange a referral to secondary care in a timely manner. Management requires an individualized approach, taking into account breastfeeding and maternal comorbidities. After delivery, calcium channel blockers (CCB) or angiotensin-coverting enzyme inhibitors (ACEi) are recommended. Although ACEi are contraindicated during pregnancy, they are considered a safe therapeutic option in postpartum. If additional blood pressure control is required, combination therapy with a CCB and an ACEi may be introduced, When a beta-blocker is indicated, labetalol or metoprolol is preferred. Routine use of diuretics is not recommended because of the potential reduction in lactation at higher doses. Methyldopa is used less frequently in the postpartum period due to a presumed association with depressive symptoms, although the evidence remains inconclusive. Several studies have shown that breastfeeding after preeclampsia is associated with a lower long-term risk of maternal hypertension, further emphasizing the importance of an individualized therapeutic approach that supports lactation whenever possible. The postpartum period represents a critical window for long-term CVR prevention in women with postpartum hypertension due to their increased risk of developing chronic hypertension and cardiovascular diseases. International guidelines recommend structured postpartum follow-up at 6–12 weeks, 6 months, and 12 months after delivery, including cardiovascular risk assessment, lifestyle counseling, as well as timely additional evaluation and preventive interventions when indicated. In this process, the FP plays a central role due to the continuity and comprehensiveness of primary care.

Conclusion PH represents a clinical challenge due to nonspecific presentation and continuation of care to primary care. FPs play a central and indispensable role in early recognition, appropriate selection of antihypertensive therapy and long-term reduction of CVR through continuous, individualized, and structured follow-up. A proactive and patient-centered approach in collaboration with obstetric care providers is essential for preserving long-term maternal health.

REFERENCES:

1. Kumar NR, Hirshberg A, Srinivas SK. Best Practices for Managing Postpartum Hypertension. Curr Obstet Gynecol Rep. 20. lipanj 2022.;11(3):159–68.
2. Countouris M, Mahmoud Z, Cohen JB, Crousillat D, Hameed AB, Harrington CM, i ostali. Hypertension in Pregnancy and Postpartum: Current Standards and Opportunities to Improve Care. Circulation. 18. veljača 2025.;151(7):490–507.
3. McCoy SM, Hurwitz M, Kwapong YA, Bircan E, Spitz JA, Dastmalchi LN, i ostali. Advances in postpartum hypertension management: a review of current guidelines and interventions. Npj Womens Health. 06. kolovoz 2025.;3(1):47.
4. Irfan A, Haider SH, Sheikh SM, Larik MO, Abbas M, Hashmi MR. Evaluation of antihypertensives for post partum management of hypertensive disorders of pregnancy: A systematic review and meta-analysis. Curr Probl Cardiol. kolovoz 2024.;49(8):102584.

Hematurija u praksi obiteljskog liječnika - pristup i pregled smjernica

Karla Sertić[1], Valerija Bralić Lang[1,2]

1. Specijalistička ordinacija obiteljske medicine prim. doc. dr. sc. Valerija Bralić Lang, dr. med. spec. obiteljske medicine
2. Katedra obiteljske medicine, Škola narodnog zdravlja „Andrija Štampar“, Medicinski fakultet Sveučilišta u Zagrebu

Ključne riječi: hematurija, primarna zdravstvena zaštita, analiza urina, urološke bolesti
Adresa za dopisivanje: Puljska ulica 3, 10000 Zagreb
E adresa: sertickarla@gmail.com
ORCID: Karla Sertić: 0009-0003-1162-4353
Valerija Bralić Lang: 0000-0002-9142-1569

Uvod s ciljem: Hematurija je često posljedica benignih uzroka ili kontaminacije, a može biti i prvi ili jedini znak prisutnosti uroloških malignoma. Zbog toga je potrebna pažljiva procjena i strukturirani daljnji tijek. Cilj ovog rada je prikazati sistematičan pregled smjernica i preporučeni pristup pacijentima s hematurijom u primarnoj zdravstvenoj zaštiti.

Rasprava: Hematurija, bilo makroskopska ili mikroskopska, čest je urološki simptom. Mikroskopska hematurija najčešće se definira kao prisutnost više od 3 crvene krvne stanice po vidnom polju mikroskopa uvećanja 400x. Krvarenje može potjecati iz bilo kojeg dijela mokraćnog sustava, a česti benigni uzroci su infekcije mokraćnog sustava, vaginalna atrofija, urolitijaza i benigna hiperplazija prostate. Ipak, hematurija ima pozitivnu prediktivnu vrijednost od ≥5 % za urološke maligne bolesti, uključujući karcinom bubrežnih stanica, mokraćnog mjehura i prostate. Čimbenici rizika za urološki malignom uključuju pušenje, muški spol, stariju životnu dob, perzistirajuću hematuriju i anamnezu makroskopske hematurije. Prilikom prikupljanja anamneze, ključna su pitanja o dizuričnim tegobama, vrućici i bolovima u slabinama. Potrebno je provesti abdominalni i urogenitalni pregled, lumbalnu sukusiju, kao i mjerenje krvnog tlaka (s obzirom na moguće glomerularne uzroke hematurije). Kod žena s infekcijom mokraćnog sustava i hematurijom, kontrolna mikroskopska analiza mokraće treba se ponoviti šest do 12 tjedana nakon uspješnog liječenja. Muškarcima starijim od 50 godina preporučuje se procjena za karcinom prostate digitorektalnim pregledom i određivanjem prostata-specifičnog antigena. U slučaju sumnje na kontaminaciju uzorka (npr. zbog menstruacije, traume ili urogenitalne atrofije kod žena), mikroskopska analiza mokraće treba se ponoviti. Analiza test-trakicom nije dovoljna za utvrđivanje hematurije i zahtijeva potvrdu mikroskopskom analizom. Antikoagulantna terapija nije prihvatljiv uzrok mikroskopske hematurije, pa je potrebno daljnje dijagnostičko razjašnjenje. Urogenitalni malignom nalazi se u otprilike tri posto slučajeva mikroskopske i 10–20 % slučajeva makroskopske hematurije, što naglašava važnost pravovremene procjene i upućivanja. Svi pacijenti s makroskopskom hematurijom trebaju biti upućeni urologu, dok se kod mikroskopske hematurije primjenjuje pristup temeljen na stratifikaciji rizika. Prema smjernicama Američkog udruženja urologa (engl. American Urological Association) iz 2020., niski rizik podrazumijeva dob mlađu od 50 godina, manje od 10 paketa-godina pušenja (engl. pack-years), manje od 10 eritrocita po vidnom polju i odsutnost drugih čimbenika rizika. Kod pacijenata niskog rizika, kontrolna mikroskopija mokraće treba se provesti unutar šest mjeseci. Kod pacijenata s čimbenicima rizika preporučuje se ultrazvuk bubrega i mokraćnog trakta te specijalistički pregled urologa. Ako je početna obrada negativna, ali hematurija perzistira, pacijenta je potrebno ponovno uputiti urologu i provesti dvije dodatne mikroskopske analize mokraće (za šest i 12 mjeseci). Uz dva uzastopna negativna nalaza, daljnja obrada nije indicirana. U slučaju pozitivnog nalaza, a uz odsutnost proteinurije i drugih rizičnih čimbenika, praćenje uključuje godišnju mikroskopsku analizu mokraće, praćenje bubrežne funkcije i mjerenje arterijskog tlaka. Uzrok hematurije se sa sigurnošću može utvrditi u samo oko 30% pacijenata.

Zaključak: Budući da je hematurija čest nalaz i potencijalno rani znak maligniteta, liječnici obiteljske medicine trebaju pristupiti ovim pacijentima sistematično. Poznavanje čimbenika rizika, detaljna anamneza i klinički pregled osiguravaju pravilan dijagnostičko-terapijski tijek liječenja za pacijente iz rizičnih skupina.

LITERATURA:

1. European Association of Urology. EAU Guidelines on Renal Cell Carcinoma. Limited update March 2025. Arnhem, The Netherlands: EAU Guidelines Office; 2025 [cited 2026 January 24]. Dostupno na: https://uroweb.org/guidelines/renal-cell-carcinoma
2. Microscopic Hematuria in Adults: Updated Recommendations from the American Urological Association | AAFP. [cited 2026 Jan 22]. Dostupno na: https://www.aafp.org/pubs/afp/issues/2021/1200/p655.html
3. Shapley M, Mansell G, Jordan JL, Jordan KP. Positive predictive values of ≥5% in primary care for cancer: systematic review. Br J Gen Pract J R Coll Gen Pract. 2010 Sept;60(578):e366-377.
4. Leslie SW, Hamawy K, Saleem MO. Gross and Microscopic Hematuria. In: StatPearls. Treasure Island (FL): StatPearls Publishing; 2025 [cited 2026 Jan 22]. Dostupno na: http://www.ncbi.nlm.nih.gov/books/NBK534213/
5. O'Connor E, McVey A, Demkiw S, Lawrentschuk N, Murphy DG. Assessment and management of haematuria in the general practice setting. Aust J Gen Pract. 2021 July 1;50(7):467–71.

Hematuria in Family Practice – An Overview and Approach

Karla Sertić[1], Valerija Bralić Lang[1,2]

1. Family Medicine Specialist Office of Dr. Valerija Bralić-Lang, MD, PhD, Specialist in Family Medicine
2. Department of Family Medicine, School of Public Health „Andrija Štampar“, School of Medicine, University of Zagreb

Keywords: Hematuria, Primary Health Care, Urinalysis, Urologic Diseases
Correspondence address: Puljska ulica 3, 10000 Zagreb
E mail: sertickarla@gmail.com
ORCID: Karla Sertić: 0009-0003-1162-4353
Valerija Bralić Lang: 0000-0002-9142-1569

Introduction with aim: Hematuria is often due to benign causes and contamination, but it can also be a strong first or solitary indicator of underlying urological malignancy, warranting a cautious and systematic approach. The aim of this study is to present an overview of guidelines and recommended management for patients with hematuria in primary care.

Discussion: Hematuria, whether gross or microscopic, is a common urological symptom. Microscopic hematuria is most commonly defined as >3 red blood cells per high-power field (RBC/HPF) on urine microscopy. The origin of bleeding may be from anywhere along the urinary tract, with common benign causes including urinary tract infections (UTIs), vaginal atrophy, urolithiasis and benign prostatic enlargement. However, hematuria has a positive predictive value ≥5% for urological cancers overall, namely, renal cell carcinoma, bladder, and prostate cancer. Risk factors for urological malignancy include smoking, male sex, increased age, persistent hematuria, and a history of gross hematuria. History-taking should include questions about dysuria, fever and flank pain. Patients should receive an abdominal and urogenital examination, lumbar percussion and blood pressure assessment (to assess for glomerulopathic causes of hematuria). For women with UTI, repeat urine microscopy should be performed 6–12 weeks after successful treatment. Men over 50 should be evaluated for prostate cancer with a digital rectal examination and prostate specific antigen testing. In cases of suspected sample contamination (eg due to menstruation, trauma or urogenital atrophy in female patients), urine microscopy should be repeated. Urine dipstick analysis is not sufficient for diagnosing hematuria and requires confirmation through microscopic urinalysis. Anticoagulation is not an accepted cause of microscopic hematuria and these patients require further workup. Genitourinary malignancy is found in approximately 3% of microscopic hematuria cases and 10–20% of gross hematuria cases, highlighting the importance of timely assessment and referral. All patients presenting with gross hematuria should receive urological referral, whereas a risk-stratified approach is applied to patients with microscopic hematuria. According to the 2020 American Urological Association guidelines, low risk is defined as age <50 years, <10 pack-year smoking history, <10 RBC/HPF, and absence of other risk factors. In low-risk patients with microscopic hematuria, urinalysis should be repeated within six months. In patients with risk factors, renal tract ultrasonography and urologic referral are advised. If the initial workup is negative but hematuria persists, the patient should be re-referred to a urologist and receive two follow-up urine microscopy tests (at 6 and 12 months). If both are negative, no further investigation is needed. If positive, and in the absence of proteinuria and other risk factors, annual monitoring with urine microscopy, renal function assessment, and blood pressure measurement is sufficient. A definitive cause of hematuria is found in only about 30% of patients.

Conclusion: As a common finding and potential early sign of malignancy, hematuria requires a systematic approach from family physicians. Knowledge of risk factors, careful history-taking and examination ensure appropriate management for patients at risk.

REFERENCES:

1. European Association of Urology. EAU Guidelines on Renal Cell Carcinoma. Limited update March 2025. Arnhem, The Netherlands: EAU Guidelines Office; 2025 [cited 2026 January 24]. Dostupno na: https://uroweb.org/guidelines/renal-cell-carcinoma
2. Microscopic Hematuria in Adults: Updated Recommendations from the American Urological Association | AAFP. [cited 2026 Jan 22]. Dostupno na: https://www.aafp.org/pubs/afp/issues/2021/1200/p655.html
3. Shapley M, Mansell G, Jordan JL, Jordan KP. Positive predictive values of ≥5% in primary care for cancer: systematic review. Br J Gen Pract J R Coll Gen Pract. 2010 Sept;60(578):e366-377.
4. Leslie SW, Hamawy K, Saleem MO. Gross and Microscopic Hematuria. In: StatPearls. Treasure Island (FL): StatPearls Publishing; 2025 [cited 2026 Jan 22]. Dostupno na: http://www.ncbi.nlm.nih.gov/books/NBK534213/
5. O'Connor E, McVey A, Demkiw S, Lawrentschuk N, Murphy DG. Assessment and management of haematuria in the general practice setting. Aust J Gen Pract. 2021 July 1;50(7):467–71.

Uloga mikrobiote crijeva u patogenezi i progresiji kronične bubrežne bolesti

Lorena Bosnar Zelenika[1], Valerija Bralić Lang[2,3]

1. Dom zdravlja Zagreb – Centar
2. Specijalistička ordinacija obiteljske medicine prim. doc. dr. sc. Valerija Bralić Lang, dr.med. spec. obiteljske medicine
3. Katedra obiteljske medicine, Škola narodnog zdravlja „Andrija Štampar“, Medicinski fakultet Sveučilišta u Zagrebu

Ključne riječi: crijevna mikrobiota, disbioza, kronična bubrežna bolest, liječnik obiteljske medicine, prehrana
Adresa za dopisivanje: Lorena Bosnar Zelenika, Zlatarova zlata 91, 10020 Zagreb
E adresa: lorena.bosnar@gmail.com
ORCID: Lorena Bosnar: 0000-0001-8968-6827
Valerija Bralić Lang: 0000-0002-9142-1569

Uvod: Kronična bubrežna bolest (KBB) značajan je rastući javnozdravstveni problem. Rana identifikacija i pravovremeno liječenje ključni su za sprječavanje progresije bolesti, pri čemu je uloga liječnika obiteljske medicine (LOM) neizostavna. U novije vrijeme crijevna se mikrobiota prepoznaje kao važan čimbenik u patofiziologiji i progresiji KBB, a time raste i interes za njezin terapijski potencijal.

Rasprava: Crijevna mikrobiota predstavlja skup mikroorganizama (virusi, gljivice, arheje i bakterije) koji kolonizira ljudski gastrointestinalni trakt i pridonosi zdravlju pojedinca. Bakterije predstavljaju najbrojniju i najistraženiju komponentu crijevne mikrobiote. Dva bakterijska kolјena (engl. phyla) - Bacillota i Bacteroidota čine 90 % crijevne mikrobiote kod zdravih. Dinamični sastav crijevne mikrobiote pod izravnim je utjecajem mnogih čimbenika, pri čemu je prehrana jedan od najvažnijih. Istraživanja su pokazala da je sastav mikrobiote u osoba s KBB promijenjen u odnosu na zdrave kontrole. Osobe s KBB imaju nižu relativnu zastupljenost bakterija iz porodice Prevotellaceae i roda Roseburia te značajno veću prisutnost potencijalnih patogena iz porodica Enterobacteriaceae i Streptococcaceae te roda Enterococcus. Određene razlike u sastavu mikrobiote primijećene su i kod pacijenata na peritonejskoj i hemodijalizi, no istraživanja ostaju ograničena zbog malog broja ispitanika. U ranoj fazi KBB dolazi do narušavanja ravnoteže crijevne mikrobiote – disbioze. Iako se najzaslužnijima za to smatraju promjene u obrascima prehrane i polifarmacija, danas se zna da i KBB „per se“ dovodi do promjena u crijevnom lumenu. Uremija povisuje pH i narušuje integritet crijevne barijere, pogodujući prekomjernom rastu mikroorganizama koji koriste ureu kao izvor energije, a smanjujući relativnu zastupljenost saharolitičkih bakterija koje proizvode kratkolančane masne kiseline. Ta neravnoteža pogoduje stvaranju uremijskih toksina poput indoksil sulfata i p-krezil sulfata, koji posljedično potiču sistemsku upalu, oksidativni stres i oštećenje endotela, ubrzavajući napredovanje KBB. Tradicionalne prehrambene preporuke za KBB ograničavaju unos voća, povrća, orašastih plodova i drugih namirnica bogatih vlaknima, fitokemikalijama i antioksidansima, a koji su ključni nutrijenti za crijevnu mikrobiotu. Niskoproteinske dijete također mijenjaju sastav crijevne mikrobiote. Često korišteni lijekovi u KBB, poput inhibitora protonske pumpe (IPP), metformina, kolekalciferola i laksativa, značajno utječu na crijevnu mikrobiotu. Također, crijevnoj disbiozi doprinose i drugi faktori poput manjka tjelesne aktivnosti, konstipacije i kronične upale. LOM mogu značajno doprinijeti usporavanju progresije ranih faza KBB kroz promicanje nefroprotektivnih prehrambenih obrazaca i praćenje simptoma disbioze (nadutost, opstipacija, promjene u apetitu). Mediteranska prehrana, prehrana bogata vlaknima, fermentabilnim ugljikohidratima i biljnim izvorima proteina povoljno utječu na sastav mikrobiote. Biljna prehrana također smanjuje unos fosfora i životinjskih proteina, što dodatno rasterećuje bubrege. Ovakav prehrambeni obrazac savjetuje se osobito visokorizičnim pacijentima poput hipertoničara i dijabetičara. LOM treba zastupati racionalnu uporabu lijekova koji mijenjaju mikrobiotu, poput antibiotika i IPP. LOM može razmotriti upotrebu probiotika ili prebiotika kod pacijenata sa simptomima disbioze, a iako su dokazi još u razvoju, preliminarna istraživanja upućuju na smanjenje upalnih markera i uremijskih toksina takvim intervencijama.

Zaključak: Očuvana raznolikost i stabilnost crijevne mikrobiote (eubioza) važan je, ali često zanemaren čimbenik u zbrinjavanju bolesnika s KBB. LOM ima ulogu u prepoznavanju disbioze i pružanju individualiziranih savjeta o prehrani i načinu života, što može pomoći u očuvanju bubrežne funkcije, usporavanju progresije bolesti i poboljšanju kvalitete života.

LITERATURA:

1. Kidney Disease: Improving Global Outcomes (KDIGO) CKD Work Group. KDIGO 2024 Clinical Practice Guideline for the Evaluation and Management of Chronic Kidney Disease. Kidney Int. 2024 Apr;105(4S):S117-S314.
2. Kovesdy CP. Epidemiology of chronic kidney disease: an update 2022. Kidney Int Suppl (2011). 2022 Apr;12(1):7-11. doi: 10.1016/j.kisu.2021.11.003. Epub 2022 Mar 18.
3. Lambert K, Rinninella E, Biruete A, Sumida K, Stanford J, Raoul P, et al. Targeting the Gut Microbiota in Kidney Disease: The Future in Renal Nutrition and Metabolism. J Ren Nutr. 2023 Nov;33(6S):S30-S39. doi: 10.1053/j.jrn.2022.12.004.
4. Thursby E, Juge N. Introduction to the human gut microbiota. Biochem J. 2017 May 16;474(11):1823-1836. doi: 10.1042/BCJ20160510.

The Role of the Gut Microbiota in the Pathogenesis and Progression of Chronic Kidney Disease

Lorena Bosnar Zelenika[1], Valerija Bralić Lang[2,3]

1. Zagreb Health Centre – Centar
2. Family Medicine Specialist Office of Dr. Valerija Bralić Lang, MD, PhD, Specialist in Family Medicine
3. Department of Family Medicine, School of Public Health „Andrija Štampar“, School of Medicine, University of Zagreb

Keywords: chronic kidney disease, diet, dysbiosis, family physician, gut microbiota.
Correspondence address: Lorena Bosnar Zelenika, Zlatarova zlata 91, 10020 Zagreb
E mail: lorena.bosnar@gmail.com
ORCID: Lorena Bosnar: 0000-0001-8968-6827
Valerija Bralić Lang: 0000-0002-9142-1569

Introduction: Chronic kidney disease (CKD) is a significant and growing public health concern. Early identification and timely treatment are essential for preventing disease progression, making the role of family physicians (FPs) indispensable. In recent years, the gut microbiota has been increasingly recognized as an important factor in the pathophysiology and progression of CKD, leading to growing interest in its therapeutic potential.

Discussion: The gut microbiota consists of a community of microorganisms (viruses, fungi, archaea, and bacteria) that colonize the human gastrointestinal tract and contribute to overall health. Bacteria represent the most numerous and most extensively studied component of the gut microbiota. Two bacterial phyla, Bacillota and Bacteroidota, constitute about 90% of the gut microbiota in healthy individuals. The dynamic composition of the gut microbiota is directly influenced by numerous factors, among which diet is one of the most important. Research has shown that the microbiota composition in individuals with CKD differs from that of healthy controls. People with CKD have a lower relative abundance of bacteria from the family Prevotellaceae and genus Roseburia, and a significantly higher presence of potential pathogens from the families Enterobacteriaceae and Streptococcaceae and the genus Enterococcus. Certain differences in microbiota composition have also been observed between patients on peritoneal dialysis and haemodialysis, although studies remain limited due to small sample sizes. An imbalance of the gut microbiota, dysbiosis, develops in the early stages of CKD. Although changes in dietary patterns and polypharmacy are considered the main contributors, it is now known that CKD “per se” also leads to changes within the intestinal lumen. Uraemia increases pH and disrupts the integrity of the intestinal barrier, promoting the overgrowth of microorganisms that use urea as an energy source while reducing the abundance of saccharolytic bacteria that produce short-chain fatty acids. This imbalance facilitates the formation of uremic toxins such as indoxyl sulphate and p-cresyl sulphate, which subsequently promote systemic inflammation, oxidative stress, and endothelial damage, accelerating CKD progression. Traditional dietary recommendations for CKD restrict the intake of fruits, vegetables, nuts, and other foods rich in fibre, phytochemicals, and antioxidants, key nutrients for the gut microbiota. Low-protein diets also alter the microbiota composition. Commonly used medications in CKD, such as proton pump inhibitors (PPIs), metformin, cholecalciferol, and laxatives, significantly influence the gut microbiota. Additional contributors to dysbiosis include low physical activity, constipation, and chronic inflammation. FPs can significantly contribute to slowing CKD progression in its early stages by promoting nephroprotective dietary patterns and monitoring symptoms of dysbiosis (bloating, constipation, appetite changes). The Mediterranean diet and diets rich in fibre, fermentable carbohydrates, and plant-based protein sources positively influence microbiota composition. Plant-based diets also reduce the intake of phosphorus and animal proteins, thereby further alleviating strain on the kidneys. Such dietary patterns are particularly recommended for high-risk patients, such as those with hypertension or diabetes. FPs should advocate the rational use of medications that alter the gut microbiota, such as antibiotics and PPIs. They may also consider the use of probiotics or prebiotics in patients with dysbiosis symptoms; although evidence is still emerging, preliminary studies suggest reductions in inflammatory markers and uremic toxins with these interventions.

Conclusion: Preserved diversity and stability of the gut microbiota (eubiosis) is an important but often overlooked factor in the management of patients with CKD. FPs play a key role in recognizing dysbiosis and providing individualized dietary and lifestyle advice, which can help preserve kidney function, slow disease progression, and improve quality of life.

REFERENCES:

1. Kidney Disease: Improving Global Outcomes (KDIGO) CKD Work Group. KDIGO 2024 Clinical Practice Guideline for the Evaluation and Management of Chronic Kidney Disease. Kidney Int. 2024 Apr;105(4S):S117-S314.
2. Kovesdy CP. Epidemiology of chronic kidney disease: an update 2022. Kidney Int Suppl (2011). 2022 Apr;12(1):7-11. doi: 10.1016/j.kisu.2021.11.003. Epub 2022 Mar 18.
3. Lambert K, Rinninella E, Biruete A, Sumida K, Stanford J, Raoul P, et al. Targeting the Gut Microbiota in Kidney Disease: The Future in Renal Nutrition and Metabolism. J Ren Nutr. 2023 Nov;33(6S):S30-S39. doi: 10.1053/j.jrn.2022.12.004.
4. Thursby E, Juge N. Introduction to the human gut microbiota. Biochem J. 2017 May 16;474(11):1823-1836. doi: 10.1042/BCJ20160510.

9. POSTERI

Stenoza arterije subklavije i karotidnih arterija: klinički značaj mjerenja arterijskog tlaka na obje ruke

Marjeta Alujević Grgas[1], Luka Komić[1], Sanja Došen Janković[1]

1. Dom zdravlja Splitsko-dalmatinske županije

Ključne riječi: stenoza arterije subklavije, stenoza karotidne arterije, razlika arterijskog tlaka
Adresa za dopisivanje: Ruđera Boškovića 5, 21000 Split
E adresa: marjeta.alujevicgrgas@gmail.com
ORCID: Marjeta Alujević Grgas: 0009-0001-1108-8904
Luka Komić: 0000-0002-0616-9101
Sanja Došen Janković: 0009-0004-6943-1367

Uvod s ciljem: Stenoza arterije subklavije i karotidnih arterija najčešće je uzrokovana aterosklerotskim promjenama, a prevalencija iznosi 1,5% u općoj populaciji. Može dovesti do ishemije gornjih udova, sindroma subklavijske krađe, ishemijskog moždanog udara i drugih vaskularnih zbivanja. Rano otkrivanje stenoze ključno je za procjenu kardiovaskularnog rizika i praćenje aterosklerotskog opterećenja. Razlika sistoličkih tlakova na obje ruke veća od 20 mm Hg i /ili razlika dijastoličkih tlakova veća od 10 mm Hg u više uzastopnih mjerenja upućuje na potrebu daljnje obrade bolesnika. Cilj ovog prikaza slučaja je istaknuti kliničku važnost mjerenja arterijskog tlaka na obje ruke kao jednostavne metode za rano otkrivanje aterosklerotske bolesti velikih krvnih žila.

Prikaz slučaja: Muškarac, u dobi od 70 godina, javio se na pregled u ordinaciju zbog vrtoglavice. Iz anamneze doznajemo da je dugogodišnji pušač. Pregledom je utvrđeno da tlak na desnoj ruci iznosi 180/70 mmHg, a na lijevoj 110/70 mmHg, uz čujan šum nad lijevom karotidnom arterijom. Aaskultacijom srca utvrđeno je da je akcija ritmična, tonovi jasni uz čujan sistolički šum nad Erbovom točkom jačine II/VI. EKG je pokazao sinus ritam, negativni T-val u aVL, V1, V2 te denivelaciju ST-spojnice V4-V6. S obzirom na anamnezu, nalaz fizikalnog pregleda i EKG bolesnika smo uputili na OHBP, nakon čega je hospitaliziran te je MSCT angiografijom utvrđena okluzija proksimalnog segmenta lijeve potključne arterije, okluzija lijeve zajedničke i unutarnje karotidne arterije. Laboratorijski nalazi bili su uredni. Propisana je terapija acelisalicilnom kiselinom 100 mg, perindopril/indapamidom 8/2,5 mg, atotvastatinom 40 mg, diazepamom 5mg. Endovaskularnim pristupom izvršeno je stentiranje u zajedničkoj i vanjskoj ilijačnoj arteriji. Zatim je izvršena balon dilatacija i postavljanje stenta u lijevu zajedničku i unutarnju karotidnu arteriju. Bolesnik je pri otpustu iz bolnice bio urednog neurološkog statusa te mu je uveden klopidogrel 75 mg. UZV krvnih žila vrata tri mjeseca nakon operacije pokazuje lijevu unutarnju karotidnu arteriju uredne morfologije. Bolesniku je savjetovana kontrola UZV krvnih žila vrata nakon šest mjeseci.

Rasprava: Prikazani slučaj naglašava kliničku važnost rutinskog mjerenja arterijskog tlaka na obje ruke, osobito u bolesnika s prisutnim čimbenicima rizika za aterosklerotsku bolest. Značajna razlika u sistoličkom tlaku između desne i lijeve ruke u ovog bolesnika bila je ključan klinički pokazatelj postojanja uznapredovale periferne aterosklerotske bolesti što nam potvrđuju i podaci iz literature (1,2,3). Razlika u arterijskom tlaku >15-20 mmHg između ruku povezuje se s povećanim rizikom od subklavijalne stenoze, karotidne bolesti, ali i s većim kardiovaskularnim mortalitetom (2,3). U ovom slučaju, niži tlak na lijevoj ruci korelirao je s okluzijom lijeve potključne arterije. Uvođenje antiagregacijske, antihipertenzivne i statinske terapije potrebno je radi sekundarne prevencije kardiovaskularnih i cerebrovaskularnih događaja. Planirane redovite kontrole ultrazvukom krvnih žila vrata nužne su radi pravodobnog otkrivanja restenoze.

Zaključak: Ovaj prikaz slučaja pokazuje da je rutinsko mjerenje arterijskog tlaka na obje ruke u ordinaciji obiteljske medicine ključan i lako dostupan alat za rano otkrivanje ozbiljne aterosklerotske bolesti velikih krvnih žila. Pravodobno prepoznavanje značajne razlike u tlaku između ruku omogućuje ranije upućivanje bolesnika na dodatnu dijagnostičku obradu i započinjanje odgovarajućeg liječenja, čime se smanjuje rizik od cerebrovaskularnih i kardiovaskularnih komplikacija.

LITERATURA:

1. An X, Dong H, Deng Y, Chen Y, Zou Y, Zhang W, Jiang X. „Evaluation of the role of combining inter-arm systolic pressure difference and derivatives of pulse volume recording in detecting subclavian artery stenosis.“ Front Cardiovasc Med. 2022 Sep 15;9:962610.
2. Deşer SB, Yucel SM, Demirag MK, Kolbakir F, Keceligil HT. „Relationship of Inter-Arm Systolic Blood Pressure Difference with Subclavian Artery Stenosis and Vertebral Artery Stenosis in Patients Undergoing Carotid Endarterectomy.“ Braz J Cardiovasc Surg. 2019 Mar-Apr;34(2):136-141.
3. Heshmat-Ghahdarijani K, Ghasempour Dabaghi G, Rabiee Rad M, Bahri Najafi M. „The Relation Between Inter Arm Blood Pressure Difference and Presence of Cardiovascular Disease: A Review of Current Findings.“ Curr Probl Cardiol. 2022 Nov;47(11):101087.

Subclavian and carotid artery stenosis: the clinical importance of measuring blood pressure in both arms

Marjeta Alujević Grgas[1], Luka Komić[1], Sanja Došen Janković[1]

1. Practice of Dr. Sanja Došen Janković

Keywords: subclavian artery stenosis, carotid artery stenosis, blood pressure difference
Correspondence address: Ruđera Boškovića 5, 21000 Split
E-mail: marjeta.alujevicgrgas@gmail.com
ORCID: Marjeta Alujević Grgas: 0009-0001-1108-8904
Luka Komić: 0000-0002-0616-9101
Sanja Došen Janković: 0009-0004-6943-1367

Introduction with aim: Subclavian and carotid artery stenosis is most commonly caused by atherosclerosis, with a prevalence of approximately 1.5% in the population . It can lead to upper limb ischemia, ischemic stroke, and other vascular events. Early detection of stenosis is crucial for cardiovascular risk assessment and monitoring of atherosclerotic burden . A difference in systolic blood pressure between the two arms greater than 20 mm Hg and/or a difference in diastolic blood pressure greater than 10 mm Hg indicates the need for further evaluation. The aim of this case report is to highlight the clinical importance of measuring blood pressure in both arms as a simple method for early detection of significant large-vessel atherosclerotic disease.

Case Report: A 70-year-old male presented to the clinic with dizziness. His history revealed long-term smoking. Examination showed blood pressure of 180/70 mmHg in the right arm and 110/70 mmHg in the left arm, with a III/VI systolic murmur over the left carotid artery. Cardiac auscultation revealed a regular rhythm, audible S1 and S2 sounds, and a II/VI systolic murmur over Erb's point. ECG demonstrated sinus rhythm, negative T waves in aVL, V1, V2, and ST-segment depression in V4-V6. The laboratory results were normal. MSCT angiography revealed proximal left subclavian artery occlusion and occlusion of left common and internal carotid artery. Prescribed therapy included acetylsalicylic acid 100 mg, perindopril/indapamide 8/2.5 mg, atorvastatin 40 mg, diazepam 5 mg. Endovascular intervention involved stenting of the common and external iliac arteries. A balloon dilatation was performed; a stent was placed in the left common and internal carotid arteries. After several attempts it was not possible to pass through the hard occlusion of the proximal segment of the left subclavian artery. At hospital discharge, the patient had an intact neurological status and was started on clopidogrel 75 mg. Follow-up carotid ultrasound three months postoperatively showed normal morphology of the left internal carotid artery, while the right internal carotid artery remained occluded. The patient was advised to undergo ultrasound follow-up after six months.

Discussion: This case highlights the clinical importance of routine blood pressure measurement in both arms, especially in patients with risk factors for atherosclerotic disease. A significant systolic blood pressure difference between the right and left arms in this patient was a key clinical indicator of advanced peripheral and cerebrovascular atherosclerotic disease, consistent with data from the literature. In this case, the lower pressure in the left arm corresponded to proximal left subclavian artery occlusion. Implementation of antiplatelet, antihypertensive, and statin therapy is necessary for secondary prevention of cardiovascular and cerebrovascular events. Regular ultrasound follow-ups are essential for detection of potential restenosis.

Conclusion: Routine measurement of blood pressure in both arms in primary care can be a simple yet crucial tool for the early detection of significant large-vessel atherosclerotic disease. Timely recognition of a significant inter-arm blood pressure difference allows earlier referral for further diagnostic evaluation and initiation of appropriate treatment, thereby reducing the risk of cerebrovascular and cardiovascular complications.

REFERENCES:

1. An X, Dong H, Deng Y, Chen Y, Zou Y, Zhang W, Jiang X. „Evaluation of the role of combining inter-arm systolic pressure difference and derivatives of pulse volume recording in detecting subclavian artery stenosis.“ Front Cardiovasc Med. 2022 Sep 15;9:962610.
2. Deşer SB, Yucel SM, Demirag MK, Kolbakir F, Keceligil HT. „Relationship of Inter-Arm Systolic Blood Pressure Difference with Subclavian Artery Stenosis and Vertebral Artery Stenosis in Patients Undergoing Carotid Endarterectomy.“ Braz J Cardiovasc Surg. 2019 Mar-Apr;34(2):136-141.
3. Heshmat-Ghahdarijani K, Ghasempour Dabaghi G, Rabiee Rad M, Bahri Najafi M. „The Relation Between Inter Arm Blood Pressure Difference and Presence of Cardiovascular Disease: A Review of Current Findings.“ Curr Probl Cardiol. 2022 Nov;47(11):101087.

Liječenje nesanice u odraslih osoba

Morena Benčić[1], Luka Mitar[1]

1. Dom zdravlja Zagreb – Zapad

Ključne riječi: nesanica, primarna zdravstvena zaštita, kognitivno-bihevioralna terapija za nesanicu, kratka bihevioralna terapija za nesanicu
Adresa za dopisivanje: Vrabečak 4, Zagreb, Hrvatska
E adresa: morena.bencic@gmail.com
ORCID: Morena Benčić: 0009-0007-7537-2377
Luka Mitar: 0009-0009-3609-1171

Uvod s ciljem: Nesanica je poremećaj spavanja koji se očituje otežanim usnivanjem ili preranim buđenjem s učestalošću od najmanje 3 puta tjedno tijekom najmanje 3 mjeseca. Ukupna prevalencija iznosi 30 %, a s obzirom da povećava rizik za razvoj kardiovaskularnih bolesti, dijabetesa, depresije te ukupni mortalitet predstavlja velik javnozdravstveni problem. Cilj rada je prikazati metode liječenja nesanice u odraslih osoba.

Rasprava: Prema smjernicama za liječenje nesanice, kognitivno-bihevioralna terapija za nesanicu (engl. cognitive-behavioural therapy for insomnia, CBT-I) je preporučena kao prva linija liječenja, a ukoliko je indicirana primjena lijekova, trebala bi biti ograničena na 4 tjedna. Unatoč preporukama, lijekovi se češće koriste kao prvi izbor u liječenju nesanice. Lijekovi koji su najčešće korišteni za liječenje nesanice su antihistaminici, Z-hipnotici i benzodiazepini. Istraživanje iz 2021. godine je pokazalo da je samo 5 % oboljelih od nesanice liječeno pomoću CBT-I, dok je 51,5 % liječeno lijekovima. Tijekom perioda 2014. – 2023. godine zabilježen je kontinuiran porast incidencije propisivanja benzodiazepina i Z-hipnotika te visoka prevalencija propisivanja u trajanju duljem od 4 tjedna (benzodiazepina 44,9 %, Z-hipnotika 62,4 %). Benzodiazepini i Z-hipnotici pokazuju pozitivan učinak na spavanje (skraćeno vrijeme usnivanja (engl. sleep onset latency, SOL), produljen ukupni san (engl. total sleep time, TST), smanjeno vrijeme budnosti nakon usnivanja (engl. wake after sleep onset, WASO)), a u usporedbi s CBT-I imaju kratkotrajniji, ali brži učinak. Od neželjenih nuspojava, benzodiazepini i Z-hipnotici povezani su s razvojem ovisnosti, smanjenjem kognitivnih funkcija te povratnom nesanicom nakon prekida liječenja. Antihistaminici se ne preporučuju za liječenje nesanice zbog malog broja dokaza efikasnosti i mogućeg povećanja mortaliteta. CBT-I provode psihoterapeuti i klinički psiholozi. Intervencije koje se koriste u CBT-I su: psihoedukacija, higijena spavanja, restrikcija spavanja, kontrola stimulusa, tehnike relaksacije i kognitivno restrukturiranje. Dokazan je pozitivan učinak na vrijeme provedeno spavajući (engl. sleep efficiency, SE), težinu nesanice (engl. insomnia severity), SOL i WASO, neovisno o prisutnosti komorbiditeta i dobi pacijenta. Jedno istraživanje je dokazalo da i samoliječenje tehnikama CBT-I ima pozitivan učinak u liječenju nesanice. Meta analiza iz 2022. godine je dokazala da i primjena kratke bihevioralne terapije za nesanicu (engl. brief behavioral treatment for insomnia, BBTI) ima statistički značajan pozitivan učinak na SOL, WASO, SE i TST. BBTI mogu provoditi svi zdravstveni djelatnici, a intervencije koje se koriste su: kontrola stimulusa i restrikcija spavanja. Provodi se u 4 seanse tijekom 4 tjedna. Prva seansa se sastoji od edukacije o spavanju te dogovora režima spavanja poštujući pravila: smanjeno vrijeme provedeno u krevetu u budnosti, buđenje svaki dan u isto vrijeme, lijeganje u krevet samo ukoliko nastupi pospanost te ne zadržavanje u krevetu ukoliko san ne nastupi u roku 30 min. Ostale seanse služe za jačanje adherencije. BBTI je kontraindicirana u oboljelih od bipolarnog poremećaja i konvulzija.

Zaključak: Liječnici primarne zdravstvene zaštite su najčešće prvi zdravstveni djelatnici kojima se pacijenti obrate sa simptomima nesanice, a s obzirom na njen velik javnozdravstveni značaj važno je liječiti ju na najučinkovitiji način. CBT-I i BBTI imaju dokazan pozitivan učinak na liječenje nesanice te bi, s obzirom da ne uzrokuju negativne nuspojave kao lijekovi, trebale biti prva linija liječenja.

LITERATURA:

1. Riemann D, Espie CA, Altena E, Arnardottir ES, Baglioni C, Bassetti CLA, i sur. The European Insomnia Guideline: An update on the diagnosis and treatment of insomnia 2023. J Sleep Res. 2023.;32(6):e14035.
2. Zweig J, Gohar A, Bhat A. Insomnia in Adults in the Primary Care Clinic Setting. Mo Med. 2024.;121(5):379–84.
3. van Straten A, van der Zweerde T, Kleiboer A, Cuijpers P, Morin CM, Lancee J. Cognitive and behavioral therapies in the treatment of insomnia: A meta-analysis. Sleep Med Rev. travanj 2018.;38:3–16.
4. Kwon M, Wang J, Wilding G, Dickerson SS, Dean GE. Brief Behavioral Treatment for Insomnia: A Meta-Analysis. Behav Sleep Med. 2022.;20(6):674–94.
5. Troxel WM, Germain A, Buysse DJ. Clinical Management of Insomnia with Brief Behavioral Treatment (BBTI). Behav Sleep Med. listopad 2012.;10(4):266–79.

Treatment of Insomnia in Adults

Morena Benčić[1], Luka Mitar[1]

1. Dom zdravlja Zagreb – Zapad

Keywords: insomnia, primary health care, cognitive behavioral therapy for insomnia, brief behavioral treatment for insomnia
Correspondence address: Vrabečak 4, Zagreb, Hrvatska
E-mail: morena.bencic@gmail.com
ORCID: Morena Benčić: 0009-0007-7537-2377
Luka Mitar: 0009-0009-3609-1171

Introduction with aim: Insomnia is a sleep disorder characterized by difficulty initiating sleep or early morning awakening, occurring at least three times per week with a minimum duration of three months. The overall prevalence of insomnia is approximately 30 % and given its association with an increased risk of cardiovascular diseases, diabetes, depression and overall mortality, it represents a major public health problem. The aim of this paper is to present treatment modalities for insomnia in adults.

Discussion: According to current insomnia treatment guidelines, cognitive behavioral therapy for insomnia (CBT-I) is recommended as the first-line treatment, while pharmacological treatment, if indicated, should be limited to a maximum duration of four weeks. Despite these recommendations, medications are more frequently used as the initial treatment option. The most prescribed drugs for insomnia include antihistamines, Z-hypnotics, and benzodiazepines. A study conducted in 2021 showed that only 5 % of patients with insomnia were treated with CBT-I, whereas 51.5 % received pharmacological treatment. Between 2014 and 2023, a continuous increase in the incidence of benzodiazepine and Z-hypnotic prescriptions was observed, along with a high prevalence of long-term use exceeding four weeks (44.9 % for benzodiazepines and 62.4 % for Z-hypnotics). Benzodiazepines and Z-hypnotics demonstrate beneficial effects on sleep parameters, including reduced sleep onset latency (SOL), increased total sleep time (TST), and decreased wake after sleep onset (WASO). Compared to CBT-I, their effects are more rapid but shorter-lasting. However, adverse effects associated with benzodiazepines and Z-hypnotics include the development of dependence, cognitive impairment, and rebound insomnia following treatment discontinuation. Antihistamines are not recommended for the treatment of insomnia due to limited evidence of efficacy and a potential increase in mortality risk. CBT-I is delivered by psychotherapists and clinical psychologists and includes the following interventions: psychoeducation, sleep hygiene, sleep restriction, stimulus control, relaxation techniques, and cognitive restructuring. CBT-I has been shown to have a positive effect on sleep efficiency (SE), insomnia severity, SOL, and WASO, regardless of patient age or the presence of comorbidities. One study also demonstrated that self-administered CBT-I techniques can be effective in the treatment of insomnia. A 2022 meta-analysis demonstrated that brief behavioral treatment for insomnia (BBTI) also has a statistically significant positive effect on SOL, WASO, SE, and TST. BBTI can be delivered by all healthcare professionals and consists of stimulus control and sleep restriction interventions. It is conducted over four sessions within four weeks. The first session includes sleep education and the establishment of a sleep schedule based on the following rules: reducing time spent awake in bed, waking up at the same time every day, going to bed only when sleepy, and leaving the bed if sleep does not occur within 30 minutes. Subsequent sessions focus on strengthening adherence. BBTI is contraindicated in patients with bipolar disorder and seizure disorders.

Conclusion: Primary healthcare physicians are most often the first healthcare professionals consulted by patients presenting symptoms of insomnia. Given the significant public health impact of insomnia, it is essential to manage it using the most effective treatment approaches. CBT-I and BBTI have demonstrated proven efficacy in the treatment of insomnia and, as they do not cause the adverse effects associated with pharmacological therapy, should be considered first-line treatment options.

REFERENCES:

1. Riemann D, Espie CA, Altena E, Arnardottir ES, Baglioni C, Bassetti CLA, i sur. The European Insomnia Guideline: An update on the diagnosis and treatment of insomnia 2023. J Sleep Res. 2023.;32(6):e14035.
2. Zweig J, Gohar A, Bhat A. Insomnia in Adults in the Primary Care Clinic Setting. Mo Med. 2024.;121(5):379–84.
3. van Straten A, van der Zweerde T, Kleiboer A, Cuijpers P, Morin CM, Lancee J. Cognitive and behavioral therapies in the treatment of insomnia: A meta-analysis. Sleep Med Rev. travanj 2018.;38:3–16.
4. Kwon M, Wang J, Wilding G, Dickerson SS, Dean GE. Brief Behavioral Treatment for Insomnia: A Meta-Analysis. Behav Sleep Med. 2022.;20(6):674–94.
5. Troxel WM, Germain A, Buysse DJ. Clinical Management of Insomnia with Brief Behavioral Treatment (BBTI). Behav Sleep Med. listopad 2012.;10(4):266–79.

Denga virusna groznica

Lorena Bosnar Zelenika[1], Hrvoje Tiljak[2]

1. Dom zdravlja Zagreb – Centar / Zagreb Health Centre – Centar
2. Specijalistička ordinacija opće medicine prof. dr. sc. Hrvoje Tiljak, dr. med.. spec. opće medicine

Adresa za dopisivanje: Lorena Bosnar Zelenika, Zlatarova zlata 91, 10020 Zagreb
E adresa: lorena.bosnar@gmail.com
ORCID: Lorena Bosnar: 0000-0001-8968-6827
Hrvoje Tiljak: 0000-0002-6918-5934

Uvod s ciljem: Denga je arbovirusna infekcija tropskih područja. Prenosi se ubodom komarca, najčešće Aedes aegypti. Inkubacija iznosi 4–10 dana. Velik dio infekcija prolazi asimptomatski. Ako se pojave znakovi bolesti, ona najčešće traje 2–7 dana. Klinički se opisuje kao „break-bone fever“, sa simptomima visokog febriliteta, izraženih bolova u mišićima, kostima i zglobovima, bolova iza očne jabučice, osipa, mučnine i povraćanja te glavobolje. Ponovna infekcija nosi veći rizik razvoja težeg oblika bolesti. Liječenje je pretežito simptomatsko. Incidencija bolesti raste. Cilj prikaza je podsjetiti na specifičnosti denge i naglasiti vrijednost epidemiološke anamneze u proširenju diferencijalne dijagnoze febriliteta.

Prikaz slučaja: Radi se o 56-godišnjem umirovljeniku. Pri prvom dolasku u ordinaciju liječnika obiteljske medicine (LOM) pacijent se prezentirao mijalgijama, općom slabošću, febrilitetom do 39 °C, inapetencijom i suhim kašljem. U statusu su zabilježeni hiperemija ždrijela i eritem lica. Brzi antigenski test “3 u 1” bio je negativan. Na kontroli četiri dana kasnije saznaje se da je pacijent nedavno boravio na Maldivima. Učinjena je laboratorijska obrada: E 5,23; Hb 153; Tr 141; Lkc 2,7; Neutr. 1,36; Limf. 1,13; CRP 1,3. Pacijent je upućen na Kliniku za infektivne bolesti. Na Klinici se bilježe osip po udovima te rubno palpabilna jetra. Diferencijalno dijagnostički razmatrane su brojne virusne infekcije, uključujući dengu, influencu i chikungunyu. Dodatno, u laboratorijskim nalazima registrirano je: AST 102, LD 327, CK 1140, feritin 2809. PCR iz nazofaringealnog brisa, RTG srca i pluća te EKG bili su uredni. Serološkom obradom potencijalnih uzročnika (hepatitis, HIV, sifilis, malarija, chikungunya) potvrđeno je: DENV NS1 Ag pozitivan, IgM pozitivan te PCR RNA pozitivan, čime je postavljena konačna dijagnoza denga virusne groznice. Pacijent je liječen simptomatski paracetamolom 1 g i.v. 4×/dan te je zadržan na opservaciji jedan dan. Na kontroli u ambulanti tjedan dana kasnije bilježi se poboljšanje laboratorijskih nalaza i rezolucija bolesti.

Rasprava: U ordinaciji LOM denga je rijetka, pa bez adekvatne anamneze, febrilni pacijenti mogu inicijalno biti vođeni kao obična akutna respiratorna infekcija. Ključni podatak koji je usmjerio daljnju obradu u ovom prikazu bilo je nedavno putovanje u tropsko područje. Ovaj se prikaz uklapa u opće spoznaje o dengi kao bolesti s nespecifičnim ranim simptomima, mogućim osipom i laboratorijskim odstupanjima, uz činjenicu da je liječenje najčešće simptomatsko te da je epidemiološka anamneza presudna za postavljanje sumnje i pravovremenu dijagnostiku. U ranoj fazi često je teško predvidjeti koji će bolesnici razviti teži oblik bolesti. Važno je pratiti pacijenta i pravovremeno prepoznati upozoravajuće znakove (bolovi u trbuhu, povraćanje, krvarenje iz nosa ili desni, hematemeza, izraziti umor ili nemir). Za LOM je ključno procijeniti kliničku sliku, uzeti epidemiološke podatke te učiniti temeljit klinički pregled. U slučaju podatka o putovanju u egzotične krajeve potrebno je proširiti diferencijalnu dijagnozu. Pacijenta je potrebno pratiti („watchful waiting“) i, prema potrebi, pravovremeno uputiti na daljnju obradu (laboratorijske pretrage, slikovna dijagnostika i mikrobiološka obrada). Naposljetku, postavlja se pitanje potrebe za praktičnim algoritmom za obradu febrilnih pacijenata nakon putovanja, koji bi olakšao rad LOM i standardizirao klinički pristup.

Zaključak: U zbrinjavanju febrilnog pacijenta sa sumnjom na infekciju, LOM treba uzeti epidemiološku anamnezu i primijeniti individualiziran pristup.

LITERATURA:

1. Centers for Disease Control and Prevention (CDC). Dengue [Internet]. Atlanta (GA): CDC; 2025 May 22 [cited 2026 Jan 21]. Available from: https://www.cdc.gov/dengue/index.html.
2. World Health Organization. Dengue [Internet]. Fact sheet. 2025 Aug 21 [cited 2026 Jan 20]. Available from: https://www.who.int/news-room/fact-sheets/detail/dengue-and-severe-dengue.

Case report: Dengue viral fever

Lorena Bosnar Zelenika[1], Hrvoje Tiljak[2]

1. Dom zdravlja Zagreb – Centar / Zagreb Health Centre – Centar
2. Specialist family medicine practice prof. Hrvoje Tiljak, MD, PhD, family medicine specialist

Correspondence address: Lorena Bosnar Zelenika, Zlatarova zlata 91, 10020 Zagreb
E-mail: lorena.bosnar@gmail.com
ORCID: Lorena Bosnar: 0000-0001-8968-6827
Hrvoje Tiljak: 0000-0002-6918-5934

Introduction with aim: Dengue is an arboviral infection of tropical regions. It is transmitted through mosquito bites, most commonly by Aedes aegypti. The incubation period is 4–10 days. A large proportion of infections are asymptomatic. When symptoms occur, the illness typically lasts 2–7 days. Clinically, it is described as "break-bone fever," with high fever, severe muscle, bone and joint pain, pain behind the eyes, rash, nausea and vomiting, and headache. Reinfection carries a higher risk of developing severe disease. Treatment is mainly symptomatic. The incidence of the disease is increasing. The aim of this case report is to highlight key features of dengue and emphasize the value of an epidemiological history in broadening the differential diagnosis of fever.

Case report: This is a 56-year-old retired man. At his initial visit to the family physician's (FP) office, he presented with myalgias, general weakness, fever up to 39°C, loss of appetite, and a dry cough. Physical examination showed pharyngeal hyperaemia and facial erythema. A rapid "3-in-1" antigen test was negative. At follow-up four days later, it was learned that he had recently travelled to the Maldives. Laboratory testing was performed: RBC 5.23; Hb 153; Plt 141; WBC 2.7; Neut 1.36; Lymph 1.13; CRP 1.3. He was referred to the Clinic for Infectious Diseases. At the clinic, a rash on the limbs and a liver palpable at the costal margin were noted. The differential diagnosis included several viral infections, including dengue, influenza, and chikungunya. Additional laboratory findings were: AST 102, LD 327, CK 1140, ferritin 2809. Nasopharyngeal PCR, chest X-ray, and ECG were unremarkable. Serologic testing for potential causes (hepatitis, HIV, syphilis, malaria, chikungunya) confirmed dengue: DENV NS1 Ag positive, IgM positive, and dengue RNA PCR positive, establishing the final diagnosis of dengue viral fever. The patient was treated symptomatically with paracetamol 1 g IV four times daily and observed for one day. At follow-up in FP's office one week later, laboratory parameters had improved and the illness had resolved.

Discussion: In a FP's office, dengue is rare; therefore, without an adequate history, febrile patients may initially be managed as having a common acute respiratory infection. In this case report, the key piece of information guiding further evaluation was recent travel to a tropical region. This case is consistent with current knowledge of dengue as a disease with non-specific early symptoms, possible rash, and laboratory abnormalities, with treatment being mainly symptomatic and an epidemiological history being crucial for raising suspicion and ensuring timely diagnosis. In the early phase, it is often difficult to predict which patients will develop severe disease. It is important to monitor the patient and recognize warning signs (abdominal pain, vomiting, bleeding from the nose or gums, hematemesis, marked fatigue or restlessness) in a timely manner. For the FP, it is essential to assess the clinical presentation, obtain epidemiological information, and perform a thorough physical examination. If there is a history of travel to exotic destinations, the differential diagnosis should be broadened. The patient should be monitored ("watchful waiting") and, if necessary, referred in a timely manner for further work-up (laboratory tests, imaging, and microbiological investigations). Finally, there is a need for a practical algorithm for the work-up of febrile patients after travel, which could facilitate FP's practice and standardize the clinical approach.

Conclusion: In the management of a febrile patient with suspected infection, the FP should obtain an epidemiological history and apply an individualized approach.

REFERENCES:

1. Centers for Disease Control and Prevention (CDC). Dengue [Internet]. Atlanta (GA): CDC; 2025 May 22 [cited 2026 Jan 21]. Available from: https://www.cdc.gov/dengue/index.html.
2. World Health Organization. Dengue [Internet]. Fact sheet. 2025 Aug 21 [cited 2026 Jan 20]. Available from: https://www.who.int/news-room/fact-sheets/detail/dengue-and-severe-dengue.

Autoimunosna hemolitička anemija – prikaz slučaja

Marija Brbora[1], Diana Kurilić[2], Emina Tinodi[3]

1. Istarski domovi zdravlja
2. Dom zdravlja Ličko-senjske županije
3. Dom zdravlja Primorsko-goranske županije

Ključne riječi: anemija, hemoliza, leukemija
Adresa za dopisivanje: Marija Brbora, Castel San Pietro Terme 4, 51410 Opatija
E adresa: marijabrbora@gmail.com
ORCID: Marija Brbora: 0009-0005-4986-6379
Diana Kurilić: 0009-0008-1683-4639
Emina Tinodi: 0009-0001-9001-534X

Uvod s ciljem: Autoimunosna hemolitička anemija (AIHA) je bolest imunosnog sustava praćena hemolizom vlastitih eritrocita koja je uzrokovana autoantitijelima i/ili aktiviranim komponentama komplementa. Ovisno o osnovnoj bolesti, može biti primarna ili sekundarna, a prema serološkoj tipizaciji autoantitijela dijeli se na toplu, hladnu i miješanu. Simptomi poput naglo nastale žutice i hematurije, umora praćenog dispnejom, tahikardijom i hipotenzijom, uz prisustvo akutne anemije s retikulocitozom, mogu upućivati na hemolitičku anemiju. Cilj ovog rada je ilustrirati važnost prepoznavanja kliničkih simptoma radi pravovremenog postavljanja sumnje na AIHA-u.

Prikaz slučaja: Pacijentica u dobi od 73 godine, koja prethodno nije teže bolovala te je rijetko posjećivala obiteljskog liječnika, javila se u ordinaciju nakon što je unatrag 24 sata prije dolaska primijetila da je požutjela, slaba je i malaksala, pojačano se umara i zapuhuje. Tijekom fizikalnog pregleda uočene su ikterične i bljeđe koža i vidljive sluznice te očuvani i uredni vitalni parametri. Laboratorijskim nalazima utvrđena je izrazita leukocitoza s brojem leukocita 28x109/L, uz tešku anemiju s eritrocitopenijom, niskim hematokritom i hemoglobinom 57 g/L te povišeni bilirubin, zbog čega je upućena na žurni pregled hematologa. Za trajanja hospitalizacije dijagnostičkim je postupcima utvrđena sekundarna topla AIHA kao simptomatska manifestacija osnovne bolesti, a radilo se o B-staničnoj leukemiji vlasastih stanica (HCL). Nakon provedenog liječenja srednjim dozama parenteralnih glukokortikoida i kemoterapijskog liječenja kladribinom, došlo je do oporavka krvnih nalaza i normalizacije parametara hemolize te je indiciran nastavak terapije rituksimabom putem dnevne bolnice u trajanju od 2 mjeseca. Proteklih godinu dana po završenoj terapiji, u pacijentice se redovito prate laboratorijski nalazi te nije zabilježen recidiv bolesti.

Rasprava: AIHA se u standardnim laboratorijskim pretragama obično pokazuje kao normocitna normokromna anemija, uz snižene vrijednosti hemoglobina i hematokrita te porast vrijednosti retikulocita. Laboratorijski pokazatelji hemolize uključuju porast vrijednosti bilirubina, posebice nekonjugiranog, porast enzima laktat dehidrogenaze (LDH) i sniženje vrijednosti haptoglobina. Važno je napomenuti značaj pravovremenog prepoznavanja hemolize kao uzroka anemije, čime se izbjegavaju daljnja nepotrebna dijagnostika te neadekvatno liječenje AIHA-e.

Zaključak: Autoimunosna hemolitička anemija rijetko se susreće u praksi, ali pravovremeno postavljanje dijagnoze i adekvatno liječenje mogu značajno poboljšati ishod. Liječnici obiteljske medicine trebaju imati na umu povezanost autoimunosne hemolitičke anemije s malignitetima B-stanica i koristiti sveobuhvatan pristup u dijagnostici kako bi se prikladno usmjerila daljnja skrb.

LITERATURA:

1. Raos, M., Pulanić, D., Maljković, S. i Golubić Ćepulić, B. (2023). Novosti u dijagnostici i liječenju autoimunosne hemolitičke anemije. Liječnički vjesnik, 145 (1-2), 32-42.
2. Phillips J, Henderson AC. Hemolytic Anemia: Evaluation and Differential Diagnosis. Am Fam Physician. 2018 Sep 15;98(6):354-361.
3. Hill QA, Stamps R, Massey E, Grainger JD, Provan D, Hill A; British Society for Haematology. The diagnosis and management of primary autoimmune haemolytic anaemia. Br J Haematol. 2017 Feb;176(3):395-411.

Autoimmune hemolytic anemia – case report

Marija Brbora[1], Diana Kurilić[2], Emina Tinodi[3]

1. Istrian Health Centers
2. Lika-Senj County Health Center
3. Primorje-Gorski kotar County Health Center

Key words: anemia, hemolysis, leukemia
Correspondence address: Marija Brbora, Castel San Pietro Terme 4, 51410 Opatija
E-mail: marijabrbora@gmail.com
ORCID: Marija Brbora: 0009-0005-4986-6379
Diana Kurilić: 0009-0008-1683-4639
Emina Tinodi: 0009-0001-9001-534X

Introduction with aim: Autoimmune hemolytic anemia (AIHA) is a disease of the immune system characterized by hemolysis of erythrocytes, caused by autoantibodies and/or activated complement components. Depending on the underlying disease, it can be primary or secondary, and according to the serological typing of autoantibodies it is divided into warm, cold and mixed. Symptoms such as sudden onset of jaundice and hematuria, fatigue accompanied by dyspnea, tachycardia and hypotension, alongside with acute anemia and reticulocytosis, may indicate hemolytic anemia. The aim of this paper is to illustrate the importance of recognizing clinical symptoms in order to promptly suspect AIHA.

Case report: A 73-year-old female, previously not suffering from any serious illness, presented to her family medicine physician after noticing 24 hours before her arrival that she had turned yellow, was weak and exhausted, increasingly tired and short of breath. During the physical examination, icteric and pale skin and visible mucous membranes were observed, as well as normal vital parameters. Laboratory findings revealed leukocytosis with a leukocyte count of 28x109/L, alongside with severe anemia with erythrocytopenia, low hematocrit and hemoglobin of 57 g/L, and elevated bilirubin, which is why she was referred for an urgent examination by a hematologist. During hospitalization, secondary warm AIHA was determined as a symptomatic manifestation of the underlying disease, B-cell hairy cell leukemia (HCL). Following treatment, blood counts recovered and hemolysis parameters normalized, and continuation of rituximab for 2 months was indicated. Over the past year after completion of therapy, the patient has been regularly monitored for laboratory findings and no relapse has been recorded.

Discussion: AIHA is usually shown in laboratory tests as normocytic normochromic anemia, with decreased hemoglobin and hematocrit and increased reticulocytes. Indicators of hemolysis include an increase of bilirubin, especially unconjugated, an increase in the enzyme lactate dehydrogenase (LDH) and a decrease of haptoglobin. It is important to note the importance of timely recognition of hemolysis as a cause of anemia, which avoids further unnecessary diagnostics and inadequate treatment of AIHA.

Conclusion: AIHA is rarely encountered in practice, but timely diagnosis and adequate treatment can significantly improve outcome. Family medicine physicians should be aware of the association of AIHA with B-cell malignancies and use a comprehensive diagnostic approach to appropriately direct further care.

REFERENCES:

1. Raos, M., Pulanić, D., Maljković, S. i Golubić Ćepulić, B. (2023). Novosti u dijagnostici i liječenju autoimunosne hemolitičke anemije. Liječnički vjesnik, 145 (1-2), 32-42.
2. Phillips J, Henderson AC. Hemolytic Anemia: Evaluation and Differential Diagnosis. Am Fam Physician. 2018 Sep 15;98(6):354-361.
3. Hill QA, Stamps R, Massey E, Grainger JD, Provan D, Hill A; British Society for Haematology. The diagnosis and management of primary autoimmune haemolytic anaemia. Br J Haematol. 2017 Feb;176(3):395-411.

Kritična ishemija donjeg ekstremiteta s inficiranim kroničnim ulkusom u bolesnika na hemodijalizi - posljedice kasnog vaskularnog upućivanja

Zrinka Hrgović[1,2], Dalibor Meštanek[2,3], Jure Krstulović[2,3,4]

1. Dom zdravlja Splitsko-dalmatinske županije, Split, Hrvatska
2. Medicinski fakultet Split, Sveučilište u Splitu, Split, Hrvatska
3. Klinika za kirurgiju, Klinički bolnički centar Split, Split, Hrvatska
4. Odjel za osiguranje i unapređenje kvalitete zdravstvene zaštite, Klinički bolnički centar Split, Split, Hrvatska

Ključne riječi: periferna arterijska bolest, kritična ishemija ekstremiteta, komorbiditeti, komplikacije
E adresa: zrinkahrgovic@hotmail.com
ORCID: Zrinka Hrgović: 0009-0005-9950-4624
Dalibor Meštanek: 0009-0002-3663-9589
Jure Krstulović: 0009-0009-7802-599X

Uvod s ciljem: Kronični ulkusi donjih ekstremiteta u bolesnika s perifernom arterijskom bolešću (PAB), šećernom bolešću i terminalnim bubrežnim zatajenjem predstavljaju velik terapijski izazov zbog lošeg cijeljenja i visoke stope komplikacija. Posebnost prikazanog slučaja jest činjenica da bolesnik s višestrukim rizičnim čimbenicima nije bio ranije upućen niti praćen od strane vaskularnog kirurga, već je prvi kontakt s vaskularnom kirurgijom ostvaren tek u fazi uznapredovalog, inficiranog kroničnog ulkusa i kritične ishemije ekstremiteta. Cilj ovog prikaza je ukazati na kliničke posljedice kasnog vaskularnog upućivanja te naglasiti važnost ranog prepoznavanja i praćenja visokorizičnih bolesnika.

Prikaz slučaja: Prikazan je muškarac u dobi od 87 godina, s anamnezom arterijske hipertenzije, fibrilacije atrija, šećerne bolesti tipa 2, terminalne bubrežne bolesti na redovitoj hemodijalizi (2× tjedno) te karcinoma prostate. Dulje vrijeme imao je kronični ulkus lijeve potkoljenice i pete, koji je saniran preko liječnika obiteljske medicine i patronažne službe uz postupno pogoršanje. Unatoč prisutnim rizičnim čimbenicima za PAB, bolesnik nije bio ranije pregledan niti praćen od strane vaskularnog kirurga. Prvi pregled učinjen je na hitnom kirurškom prijemu nakon pogoršanja lokalnog nalaza s razvojem crvenila, nekroze, obilne sekrecije i neugodnog mirisa. Dijagnostičkom obradom potvrđena je teška aterosklerotska bolest arterija donjih ekstremiteta s okluzijama potkoljeničnih arterija i oslanjanjem na kolateralnu cirkulaciju, što je odgovaralo slici kritične ishemije. Tijekom hospitalizacije učinjena je nekrektomija ulkusa lijeve potkoljenice, a mikrobiološkom analizom potvrđena je polimikrobna infekcija. Provedena je ciljana antibiotska terapija, ponavljani kirurški debridmani i lokalna terapija rane, uz redovite hemodijalize zbog metaboličkih poremećaja i hiperkalemije. Pri otpustu je zabilježeno privremeno lokalno poboljšanje uz smanjenje znakova infekcije, poboljšan cirkulacijski status, ali bez mogućnosti rješavanja osnovnog ishemijskog uzroka. Bolesnik je otpušten uz preporuke za nastavak kronične terapije, dovršetak antibiotskog liječenja, redovite lokalne toalete i previjanja rane svaka 2–3 dana uz primjenu obloga, uzimanja antikoagulantne terapije, nastavak redovite hemodijalize, poticanje mobilizacije u skladu s mogućnostima te planirane kontrolne preglede u ambulanti vaskularne kirurgije. Nakon otprilike mjesec i pol dolazi do ponovnog pogoršanja rane uz progresiju nekroze i znakove infekcije, što je zahtijevalo ponovnu hospitalizaciju, dodatnu kiruršku obradu i novu ciljanu antibiotsku terapiju. Na kasnijim kontrolama vaskularnog kirurga rana je bila u fazi cijeljenja.

Rasprava: Ovaj slučaj jasno ilustrira posljedice kasnog upućivanja vaskularnom kirurgu u bolesnika s visokim rizikom za razvoj PAB-a. U literaturi je dobro poznato da rana dijagnostika i pravovremena revaskularizacija mogu značajno poboljšati ishode i smanjiti rizik od amputacije. U prikazanom slučaju prvi kontakt s vaskularnom kirurgijom ostvaren je tek u fazi kritične ishemije i inficiranog ulkusa, kada su mogućnosti kauzalnog liječenja već bile znatno ograničene. Posebno nepovoljnu prognozu dodatno pogoršava terminalna bubrežna bolest i hemodijaliza.

Zaključak: Prikazani slučaj naglašava važnost ranog prepoznavanja PAB-a i pravodobnog upućivanja vaskularnom kirurgu, osobito u bolesnika s dijabetesom i kroničnom bubrežnom bolešću. Kasno postavljanje dijagnoze može dovesti do razvoja kritične ishemije, teških infekcija i ograničenih terapijskih opcija. Osnovna poruka ovog prikaza jest potreba za sustavnim vaskularnim probiranjem i multidisciplinarnim pristupom u visokorizičnih bolesnika.

LITERATURA:

1. Levin SR, Arinze N, Siracuse JJ. Lower extremity critical limb ischemia: A review of clinical features and management. Trends Cardiovasc Med. 2020 Apr;30(3):125-130. doi: 10.1016/j.tcm.2019.04.002.
2. Hsieh MY, Chuang SY, Lee CK, Luo CM, Cheng CH, Liao MT, Lin PL, Yang TF, Wu CC. Risks and outcomes of critical limb ischemia in hemodialysis patients: a prospective cohort study. Clin Kidney J. 2022 Dec 8;16(3):585-595. doi: 10.1093/ckj/sfac263.
3. Enea I, Martelli E. Focus on the Prevention of Acute Limb Ischemia: Centrality of the General Practitioner from the Point of View of the Internist. J Clin Med. 2023 May 24;12(11):3652. doi: 10.3390/jcm12113652.
4. Almeida-Oliveira S, Rocha-Neves J, Araujo-Andrade L, Marques MF, Goryń T, Taranta I, Hendiger W, Ribeiro H, Myrcha P. Association between multivessel disease and outcomes in acute lower limb ischemia: A cohort study. Sci Prog. 2025 Jul-Sep;108(3):368504251355146. doi: 10.1177/00368504251355146.

Lower extremity critical limb ischemia with an infected chronic ulcer in a hemodialysis patient - consequences of delayed vascular referralf

Zrinka Hrgović[1,2], Dalibor Meštanek[2,3], Jure Krstulović[2,3,4]

1. Department of Family Medicine, Health Center of Split – Dalmatia County, Split, Croatia
2. University of Split School of Medicine, Split, Croatia
3. Department of Surgery, University Hospital of Split, Croatia
4. Department of Health Care Quality, University Hospital of Split, Split, Croatia

Key words: peripheral arterial disease, critical limb ischemia, comorbidities, complications
E-mail: zrinkahrgovic@hotmail.com
ORCID: Zrinka Hrgović: 0009-0005-9950-4624
Dalibor Meštanek: 0009-0002-3663-9589
Jure Krstulović: 0009-0009-7802-599X

Introduction with aim: Chronic lower extremity ulcers in patients with peripheral arterial disease (PAD), diabetes mellitus, and end-stage renal disease represent a major therapeutic challenge due to poor wound healing and a high rate of complications. The uniqueness of the presented case lies in the fact that, despite multiple risk factors, the patient had not been previously referred to or followed by a vascular surgeon, with the first vascular surgical consultation occurring only at the stage of an advanced, infected chronic ulcer and critical limb ischemia. The aim of this case report is to highlight the clinical consequences of delayed vascular referral and to emphasize the importance of early recognition and surveillance of high-risk patients.

Case report: An 87-year-old male patient with a history of arterial hypertension, atrial fibrillation, type 2 diabetes mellitus, end-stage renal disease on regular hemodialysis (twice weekly), and prostate cancer is presented. He had a long-standing chronic ulcer of the left lower leg and heel, managed by a general practitioner and home nursing services, with gradual deterioration. Despite multiple risk factors for peripheral arterial disease (PAD), the patient had not been previously evaluated or followed by a vascular surgeon. The first vascular surgical assessment was performed at the emergency surgical department after worsening of the local wound status, including erythema, necrosis, profuse exudation, and foul odor. Diagnostic workup revealed severe atherosclerotic disease of the lower extremity arteries with crural artery occlusions and reliance on collateral circulation, consistent with critical limb ischemia. During hospitalization, necrectomy of the left lower leg ulcer was performed, and polymicrobial infection was confirmed. Targeted antibiotic therapy, repeated surgical debridements, and local wound care were provided, along with regular hemodialysis for metabolic disturbances and hyperkalemia. At discharge, temporary local improvement with reduced signs of infection was noted, although definitive resolution of the underlying ischemic cause was not possible. The patient was discharged with recommendations for continuation of chronic and anticoagulant therapy, completion of antibiotic treatment, regular wound care with dressing changes every 2–3 days, ongoing hemodialysis, mobilization as tolerated, and scheduled vascular surgery follow-up. Approximately six weeks later, the wound deteriorated again with progression of necrosis and infection, requiring rehospitalization, additional surgical intervention, and renewed targeted antibiotic therapy. At subsequent vascular surgery follow-up, the wound was in the healing phase.

Discussion: This case clearly illustrates the consequences of delayed referral to a vascular surgeon in patients at high risk for developing peripheral PAD. It is well established in the literature that early diagnosis and timely revascularization can significantly improve outcomes and reduce the risk of amputation. In the presented case, the first contact with vascular surgery occurred only at the stage of critical limb ischemia and an infected ulcer, when causal treatment options were already considerably limited. The prognosis was further adversely affected by end-stage renal disease and hemodialysis.

Conclusion: The presented case highlights the importance of early recognition of PAD and timely referral to a vascular surgeon, particularly in patients with diabetes mellitus and chronic kidney disease. Delayed diagnosis may lead to the development of critical limb ischemia, severe infections, and limited therapeutic options. The key message of this case report is the need for systematic vascular screening and a multidisciplinary approach in high-risk patients.

REFERENCES:

1. Levin SR, Arinze N, Siracuse JJ. Lower extremity critical limb ischemia: A review of clinical features and management. Trends Cardiovasc Med. 2020 Apr;30(3):125-130. doi: 10.1016/j.tcm.2019.04.002.
2. Hsieh MY, Chuang SY, Lee CK, Luo CM, Cheng CH, Liao MT, Lin PL, Yang TF, Wu CC. Risks and outcomes of critical limb ischemia in hemodialysis patients: a prospective cohort study. Clin Kidney J. 2022 Dec 8;16(3):585-595. doi: 10.1093/ckj/sfac263.
3. Enea I, Martelli E. Focus on the Prevention of Acute Limb Ischemia: Centrality of the General Practitioner from the Point of View of the Internist. J Clin Med. 2023 May 24;12(11):3652. doi: 10.3390/jcm12113652.
4. Almeida-Oliveira S, Rocha-Neves J, Araujo-Andrade L, Marques MF, Goryń T, Taranta I, Hendiger W, Ribeiro H, Myrcha P. Association between multivessel disease and outcomes in acute lower limb ischemia: A cohort study. Sci Prog. 2025 Jul-Sep;108(3):368504251355146. doi: 10.1177/00368504251355146.

Proljev u starijih s demencijom – izazov u ordinaciji obiteljske medicine

Veronika Jeličić Gaurina[1], Roberta Marković Štimac[1,2], Nina Bašić-Marković[1,2]

1. Zdravstvena ustanova Srdoči, Rijeka
2. Katedra za obiteljsku medicinu, Medicinski fakultet, Sveučilište u Rijeci

Ključne riječi: demencija, liječnik obiteljske medicine, proljev
Adresa za dopisivanje: Veronika Jeličić Gaurina, Srdoči 65D, 51000 Rijeka
E adresa: veronika.jelicic711@gmail.com
ORCID: Veronika Jeličić Gaurina: 0009-0000-7202-2514
Roberta Marković Štimac: 0000-0002-0232-0249
Nina Bašić-Marković: 0000-0001-6296-6394

Uvod s ciljem. Proljevi su česta tegoba u starijoj populaciji, a posebno ranjivu skupinu čine osobe s demencijom. Kod takvih bolesnika zbog kognitivnog oštećenja smanjena je mogućnost samostalnog prepoznavanja i pravodobnog prijavljivanja simptoma, što povećava rizik od odgođene dijagnostike, komplikacija i pogoršanja općeg stanja. Liječnik obiteljske medicine (LOM), kao prvi i kontinuirani kontakt bolesnika sa zdravstvenim sustavom, ima ključnu ulogu u ranom prepoznavanju tegoba i koordinaciji skrbi. Cilj ovog rada je prikazati najčešće uzroke učestalih proljeva u osoba s demencijom te istaknuti dijagnostičke i terapijske izazove u ordinaciji obiteljske medicine.

Rasprava. Glavni izazov u skrbi za osobe s demencijom jest pravodobno prepoznavanje simptoma. Budući da komunikaciju s liječnikom najčešće ostvaruju članovi obitelji ili njegovatelji, postoji mogućnost dobivanja nepotpunih ili nepreciznih anamnestičkih podataka. Dijagnostički pristup temelji se na ciljanom uzimanju anamneze, fizikalnom pregledu i procjeni općeg stanja, uz poseban naglasak na isključivanje hitnih i potencijalno životno ugrožavajućih stanja poput dehidracije, značajnog gubitka tjelesne mase, krvarenja iz probavnog sustava i akutne infekcije. U daljnjoj obradi fokus je na najčešćim i reverzibilnim uzrocima, među kojima se ističu nuspojave lijekova (osobito inhibitora acetilkolinesteraze i antibiotika), fekalna impakcija te neadekvatna ili neujednačena prehrana. Važan dio procjene uključuje i razmatranje funkcionalnog statusa bolesnika, razine samostalnosti, uvjeta stanovanja te dostupnosti i opterećenja njegovatelja, koji mogu značajno utjecati na tijek i ishod liječenja. LOM ima središnju ulogu u reviziji terapije, edukaciji njegovatelja, uvođenju simptomatskog liječenja te procjeni potrebe za daljnjom dijagnostičkom obradom.

Zaključak. Starije osobe koje boluju od demencije zahtijevaju individualizirani pristup dijagnostici i liječenju učestalih proljeva. Suradnja s obitelji i njegovateljima, redovita procjena terapije te usmjerenost na očuvanje funkcionalnosti i kvalitete života bolesnika od presudne su važnosti. Sustavan i proaktivan pristup u ordinaciji obiteljske medicine omogućuje rano prepoznavanje promjena u kliničkom statusu, pravodobnu prilagodbu terapije i smanjenje potrebe za hitnim intervencijama ili hospitalizacijom. S obzirom na rastući broj starije populacije, nužna je kontinuirana edukacija LOM o demenciji i njezinim popratnim stanjima.

LITERATURA:

1. Fernandez-Cotarelo MJ, Jackson-Akers JY, Nagy-Agren SE, Warren CA. Interaction of Clostridioides difficile infection with frailty and cognition in the elderly: a narrative review. Eur J Med Res. 2023;28(1):439
2. Reznik E. Risk Factors, Presentation, Diagnosis, and Treatment of C. difficile Infection in the Older Adult. Curr Treat Options Gastroenterol. 2025;23(7)
3. Hirji I, John D, Jith J, Khoshnaw H, Ganeshananthan M. Challenges and Strategies in Managing Recurrent Clostridioides difficile Infection in Older Adults. Geriatrics. 2025;10(6):158
4. Schiller LR et al. Chronic diarrhea evaluation in the elderly: IBS or something else? Nat Rev Gastroenterol Hepatol. 2019; PMID:31346793.

Diarrhea in the elderly with dementia – a challenge in family medicine practice

Veronika Jeličić Gaurina[1], Roberta Marković Štimac[1,2], Nina Bašić-Marković[1,2]

1. Primary health care center Srdoči, Rijeka
2. Department of Family Medicine, Faculty of Medicine, University of Rijeka

Key words: dementia, family medicine doctor, diarrhea
Correspondence address: Veronika Jeličić Gaurina, Srdoči 65D, 51000 Rijeka
E-mail: veronika.jelicic711@gmail.com
ORCID: Veronika Jeličić Gaurina: 0009-0000-7202-2514
Roberta Marković Štimac: 0000-0002-0232-0249
Nina Bašić-Marković: 0000-0001-6296-6394

Introduction with aim. Diarrhea is a common complaint in the elderly population, and a particularly vulnerable group are people with dementia. In such patients, due to cognitive impairment, the ability to independently recognize and report symptoms timely is reduced, which increases the risk of delayed diagnosis, complications and deterioration of the general condition. The family doctor, as the patient's first and continuous contact with the health system, has a key role in early recognition of complaints and coordination of care. The aim of this paper is to present the most common causes of frequent diarrhea in people with dementia and to highlight diagnostic and therapeutic challenges in family medicine practice.

Discussion. The main challenge in caring for people with dementia is the timely recognition of symptoms. Since communication with the doctor is most often carried out by family members or caregivers, there is a possibility of obtaining incomplete or inaccurate anamnestic data. The diagnostic approach is based on targeted history taking, physical examination and assessment of the general condition, with special emphasis on excluding urgent and potentially life-threatening conditions such as dehydration, significant weight loss, gastrointestinal bleeding and acute infection. In further work-up, the focus is on the most common and reversible causes, among which are drug side effects (especially acetylcholinesterase inhibitors and antibiotics), fecal impaction and inadequate or unbalanced diet. An important part of the assessment also includes consideration of the patient's functional status, level of independence, living conditions and availability and burden of caregivers, which can significantly affect the course and outcome of treatment. The family medicine doctor plays a central role in reviewing therapy, educating caregivers, introducing symptomatic treatment and assessing the need for further diagnostic work-up.

Conclusion. Elderly people with dementia require an individualized approach to the diagnosis and treatment of frequent diarrhea. Collaboration with family and caregivers, regular assessment of therapy, and a focus on preserving the patient's functionality and quality of life are crucial. A systematic and proactive approach in the family medicine office allows for early recognition of changes in clinical status, timely adjustment of therapy, and reduction of the need for emergency interventions or hospitalization. Given the growing number of elderly people, continuous education of family medicine doctors on dementia and its associated conditions is necessary.

REFERENCES:

1. Fernandez-Cotarelo MJ, Jackson-Akers JY, Nagy-Agren SE, Warren CA. Interaction of Clostridioides difficile infection with frailty and cognition in the elderly: a narrative review. Eur J Med Res. 2023;28(1):439
2. Reznik E. Risk Factors, Presentation, Diagnosis, and Treatment of C. difficile Infection in the Older Adult. Curr Treat Options Gastroenterol. 2025;23(7)
3. Hirji I, John D, Jith J, Khoshnaw H, Ganeshananthan M. Challenges and Strategies in Managing Recurrent Clostridioides difficile Infection in Older Adults. Geriatrics. 2025;10(6):158
4. Schiller LR et al. Chronic diarrhea evaluation in the elderly: IBS or something else? Nat Rev Gastroenterol Hepatol. 2019; PMID:31346793.

Bolesnik s manjkom α-1 antitripsina u ordinaciji liječnika obiteljske medicine

Tea Mešinović[1], Marija Magdalena Raspor[2]

1. Dom Zdravlja Primorsko-goranske županije
2. Specijalistička ordinacija obiteljske medicine Branislava Popović, dr.med.

Ključne riječi: α-1 antitripsin, kronična opstruktivna plućna bolest, emfizem pluća, dispneja
Adresa za dopisivanje: Tea Mešinović, Krešimirova 52a, 51000 Rijeka
E adresa: tea.mesinovic@domzdravlja.pgz.hr
ORCID: Tea Mešinović: 0000-0003-1461-4006
Marija Raspor: 0009-0001-2637-9034

Uvod s ciljem: Manjak α1 antitripsina je nasljedna, autosomno kodiminantna bolest koja može zahvatiti pluća, jetru, kožu. Klinička slika ovisi o zahvaćenom organskom sustavu, a dijagnoza se temelji na kliničkoj sumnji, laboratorijskom određivanju α1-antitripsina te genotipizaciji. Cilj rad je prikazati slučaj bolesnice kod koje je deficit α1-antitripsina otkriven nakon dugotrajnog dijagnostičkog procesa.

Prikaz slučaj: 64-godišnja bolesnica dolazi u ambulantu zbog pogoršanja respiratornih smetnji u vidu suhog kašlja i otežanog disanja. U kroničnoj terapiji uzima esomeprazol 40 mg, bisoprolol 2,5 mg, levetiracetam 750 mg te aklidinij bromid 340 mcg. Ne puši. Unatrag godinu dana učinjena je pulmološka obrada te je postavljena dijagnoza KOPB-a i respiratorne insuficijencije. Riječ je o bolesnici koja je operirala aneurizmu torakalne aorte nakon čega se kao komplikacija javila desnostrana slabost uz generalizirane miokloničke grčeve u vidu epi-napada. Nedugo potom pojavile su se i respiratorne smetnje u vidu pogoršanje dispneje i slabije tolerancije napora. U nekoliko navrata dobivala je zadnjih mjeseci antibiotike zbog recidivirajućih respiratornih infekcija. Nedavno je obrađena na hitnoj zbog pritiska u grudima i suhog kašlja te sumnje na plućnu tromboemboliju koja nije potvrđena. Kao nusnalaz CT angiografije opisan je bazalno panlobularni emfizem. Isključena je kardiološka etiologija tegoba. S obzirom na progresiju tegoba bolesnica je opet upućena na pulmološku obradu u drugu ustanovu. Potvrđen j e deficit α1 antitripsina (inicijalna vrijednost 0,31 g/L) uz stacionaran opis RTG-a pluća (deformirani bronhi s znacima peribronhijske fibroze), umjereno teška opstrukciju i smanjenu difuzijsku sposobnost (FEV1 54%, FEV1/FVC 60.9 %, DLCO 44%). Uvedena je supstitucijska terapija humanim inhibitorom α1 antitripsina koji dobiva intravenozno svakih 14 dana putem dnevne bolnice. Od potvrde dijagnoze bolesnica je klinički stabilno. Sugerirano je genetsko testiranje djece

Rasprava: Oko 1-2 % bolesnika s KOPB-om ima manjak L1 antitripsina stoga je za obiteljskog liječnika važno znati kada posumnjati na ovaj relativno rijedak poremećaj. Posumnjati treba kod mlađih bolesnika, u nepušača s neobjašnjivim emfizemom, bolesnika s nejasnim bolestima jetre te rjeđe panikulitisom te kod progresivnih ili recidivirajućih respiratornih smetnji koje se ne uklapaju kliničku sliku osnovne bolesti. Nije rijedak slučaj da bolesnici često dulji period čekaju potvrdu dijagnoze s obzirom da se klinička slika uvelike preklapa s drugim bolestima. Za ovaj klinički entitet karakterističan je emfizem pluća koji se javlja bazalno. 1/3 bolesnika ima blage ili nikakve simptome. Da li će se razviti klinička slika u bolesnika s manjkom α-1 antitripsina ovisi i o drugim čimbenicima kao npr.pušenje, zagađenje okoliša i sl. Važno je ispitati i obiteljsku anamnezu. Teški manjak karakterističan je za bijelu rasu, a supstitucijska terapija učinkovita je kod plućnog oblika bolesti. Ovaj slučaj dobar je primjer kako pravovremena intervencija obiteljskog liječnika i rano liječenje rijetkih poremećaja mogu uvelike poboljšati kvalitetu života bolesnika. Kod bolesnice je prošlo godinu dana od pojave prvih simptoma do defintivne potvde dijagnoze što je relativno kratak period s obzirom da vrlo često u bolesnika s rijetkim poremećajima dijagnoza dugotrajna, a često i neprepoznata.

Zaključak: Iako je liječenje oboljelih multidisciplinarno liječnik obiteljske medicine zbog kontinuiteta praćenja i pružanja dugotrajne skrbi ima važnu ulogu u pravovremenom postavljanju kliničke sumnje i skrbi za oboljele.

LITERATURA:

1. Dasí F. Alpha-1 antitrypsin deficiency. Med Clin (Barc). 2024 Apr 12;162(7):336-342.
2. Camelier AA, Winter DH, Jardim JR, Barboza CE, Cukier A, Miravitlles M. Deficiência de alfa-1 antitripsina: diagnóstico e tratamento [Alpha-1 antitrypsin deficiency: diagnosis and treatment]. J Bras Pneumol. 2008 Jul;34(7):514-27.
3. Lascano JE, Campos MA. The important role of primary care providers in the detection of alpha-1 antitrypsin deficiency. Postgrad Med. 2017 Nov;129(8):889-895.
4. Hernández Pérez JM, López Charry CV. Detection of cases of Alpha-1 Antitrypsin Deficiency, Should We Restrict or Expand?]. Open Respir Arch. 2023 Aug 7;5(3):100262.

A patient with α-1 antitrypsin deficiency in a family doctor's practice

Tea Mešinović[1], Marija Magdalena Raspor[2]

1. Health Center of Primorsko-goranska county
2. Specialist family medicine practice Branislava Popović, dr.med.

Key words: α-1 antitrypsin, chronic obstructive pulmonary disease, pulmonary emphysema, dyspnea
Correspondence address: Tea Mešinović, Krešimirova 52a, 51000 Rijeka
E-mail: tea.mesinovic@domzdravlja.pgz.hr
ORCID: Tea Mešinović: 0000-0003-1461-4006
Marija Raspor: 0009-0001-2637-9034

Introduction with aim: α1 antitrypsin deficiency is a hereditary, autosomal codominant disease that can affect the lungs, liver, and skin. The clinical picture depends on the affected organ system, and the diagnosis is based on clinical suspicion, laboratory determination of α1 antitrypsin, and genotyping. The aim of the paper is to present the case of a patient in whom α1 antitrypsin deficiency was discovered after a long diagnostic process.

Case study: A 64-year-old patient comes to family doctor practice due to worsening respiratory problems in the form of a dry cough and difficulty breathing. In chronic therapy, she takes esomeprazole 40 mg, bisoprolol 2.5 mg, levetiracetam 750 mg and aclidinium bromide 340 mcg. She does not smoke. A year ago, a pulmonological examination was performed and a diagnosis of COPD and respiratory failure was made. This is a patient who had undergone thoracic aortic aneurysm surgery, after which right-sided weakness with generalized myoclonic spasms in the form of epi-seizures occurred as a complication. Shortly thereafter, respiratory problems appeared in the form of worsening dyspnea and poorer exercise tolerance. She has been receiving antibiotics on several occasions in recent months due to recurrent respiratory infections The patient was recently treated in the emergency room for chest tightness and a dry cough and suspected pulmonary thromboembolism, which was not confirmed. Basal panlobular emphysema was described as an incidental finding of CT angiography. A cardiac etiology of the complaints was excluded. Due to the progression of her symptoms, the patient was again referred for pulmonology treatment at another institution. A deficiency of α1 antitrypsin (initial value 0.31 g/L) was confirmed with a stationary X-ray description of the lungs (deformed bronchi with signs of peribronchial fibrosis), moderately severe obstruction and reduced diffusion capacity (FEV1 54%, FEV1/FVC 60.9%, DLCO 44%). Substitution therapy with human α1 antitrypsin inhibitor was introduced, which is given intravenously every 14 days through a day hospital. Since the confirmation of the diagnosis, the patient has been clinically stable. Genetic testing of children is suggested.

Discussion: About 1-2% of patients with COPD have L1 antitrypsin deficiency, so it is important for the family doctor to know when to suspect this relatively rare disorder. It should be suspected in younger patients, in non-smokers with unexplained emphysema, in patients with unclear liver diseases and, less commonly, panniculitis, and in progressive or recurrent respiratory disorders that do not fit the clinical picture of the underlying disease. It is not uncommon for patients to wait for a longer period of time for confirmation of the diagnosis, given that the clinical picture largely overlaps with other diseases. This clinical entity is characterized by pulmonary emphysema, which occurs basally. 1/3 of patients have mild or no symptoms. Whether a clinical picture will develop in patients with α-1 antitrypsin deficiency also depends on other factors, such as smoking, environmental pollution, etc. It is also important to examine the family history. Severe deficiency is characteristic for a white race, and substitution therapy is effective in the pulmonary form of the disease. This case is a good example of how timely interventions by a family doctor and timely treatment of rare disorders can improve the patient's quality of life. In the patient, a year passed from the appearance of the first symptoms to the definitive confirmation of the diagnosis, which is a relatively short period, considering that very often in patients with rare disorders the diagnosis is long-term and often unrecognized.

Conclusion: Although the treatment of patients is multidisciplinary, the family medicine physician, due to the continuity of monitoring and provision of long-term care, plays an important role in the timely establishment of clinical suspicion and care for patients.

REFERENCES:

1. Dasí F. Alpha-1 antitrypsin deficiency. Med Clin (Barc). 2024 Apr 12;162(7):336-342.
2. Camelier AA, Winter DH, Jardim JR, Barboza CE, Cukier A, Miravitlles M. Deficiência de alfa-1 antitripsina: diagnóstico e tratamento [Alpha-1 antitrypsin deficiency: diagnosis and treatment]. J Bras Pneumol. 2008 Jul;34(7):514-27.
3. Lascano JE, Campos MA. The important role of primary care providers in the detection of alpha-1 antitrypsin deficiency. Postgrad Med. 2017 Nov;129(8):889-895.
4. Hernández Pérez JM, López Charry CV. Detection of cases of Alpha-1 Antitrypsin Deficiency, Should We Restrict or Expand?]. Open Respir Arch. 2023 Aug 7;5(3):100262.

Novootkrivena fibrilacija atrija sa znakovima srčanog zatajenja

Vjera Mihaljević[1], Matea Matić Ličanin[2], Ivana Slišković[2,3]

1. Specijalistička ordinacija obiteljske medicine Marinela Somek, dr.med., spec. obiteljske medicine, Karlovac, Hrvatska
2. Medicinski fakultet Osijek, Sveučilište J.J. Strossmayer u Osijeku, Osijek, Hrvatska
3. Dom zdravlja Osječko-baranjske županije, Osijek, Hrvatska

Ključne riječi: fibrilacija atrija; srčano zatajenje; hipertenzija; obiteljska medicina
Adresa za dopisivanje: Vjera Mihaljević, J.J. Huttlera 4, Osijek
E adresa: nincevicv@gmail.com
ORCID: Vjera Mihaljević: 0000-0002-5190-2202
Matea Matić Ličanin: 0000-0003-4429-3135
Ivana Slišković: 0009-0004-9770-7113

Uvod s ciljem: Fibrilacija atrija najčešća je srčana aritmija i povezana je sa značajnim morbiditetom i mortalitetom. Europsko kardiološko društvo (ESC) i Europsko udruženje za kardiotorakalnu kirurgiju (EACTS) uvode 2024. godine AF-CARE okvir, strukturirani pristup skrbi koji obuhvaća upravljanje komorbiditetima i čimbenicima rizika, prevenciju moždanog udara i tromboembolije, kontrolu simptoma te kontinuiranu kliničku evaluaciju bolesnika. Cilj ovog prikaza slučaja jest prikaz ambulantnog dijagnostičkog i terapijskog postupka i zbrinjavanja pacijenta s arterijskom hipertenzijom, fibrilacijom atrija i kliničko-biokemijskim obilježjima početnog srčanog zatajenja s očuvanom ejekcijskom frakcijom (HFpEF), uz naglasak na individualizaciju terapije i praćenje odgovora na liječenje od strane liječnika obiteljske medicine (LOM).

Prikaz slučaja: Pacijent u dobi od 83 godine dolazi u ambulantu u pratnji kćeri zbog povišenih vrijednosti arterijskog tlaka, povremenih vrtoglavica, drhtavice i blagih edema skočnih zglobova, bez dispneje. U anamnezi su arterijska hipertenzija i benigna hiperplazija prostate, uz redovitu terapiju perindopril/indapamidom, moksonidinom i doksazosinom. Pri pregledu je svjestan, orijentiran, afebrilan i hemodinamski stabilan (RR 140/75 mmHg), bez znakova respiratorne insuficijencije. Auskultacijski se registrira aritmična srčana akcija, a EKG potvrđuje fibrilaciju atrija s ventrikularnim odgovorom oko 90/min. Indicirana je dodatna dijagnostička obrada (NT-proBNP, holter EKG) te je uveden bisoprolol 2,5 mg. Kontrolni nalazi pokazuju povišen NT-proBNP (2143 ng/L) i trajnu fibrilaciju atrija uz prosječnu frekvenciju od 76/min. Zbog povišenog tromboembolijskog rizika uvedeni su dabigatraneteksilat (110 mg 2x1) i eplerenon 25 mg. Ehokardiografija pokazuje očuvanu sistoličku funkciju lijevog ventrikula, ali na donjoj granici normalnih vrijednosti (EF 51%), uvećanje obje pretklijetke, umjerenu mitralnu i trikuspidnu regurgitaciju te dijastoličku disfunkciju. Tijekom praćenja reducirana je antihipertenzivna terapija, a zbog nepodnošljivosti dabigatran je zamijenjen endoksabanom 60 mg. Kontrolni nalazi pokazuju stabilnu bubrežnu funkciju (eGFR 77) i značajan pad NT-proBNP-a (922 ng/L), uz kliničko poboljšanje

Rasprava: Fibrilacija atrija i HFpEF često koegzistiraju u starijoj populaciji, a dijagnoza HFpEF-a može biti otežana zbog nespecifičnih simptoma. Povišene vrijednosti NT-proBNP-a, uvećanje pretklijetki te dijastolička disfunkcija predstavljaju ključne dijagnostičke elemente. U prikazanom slučaju, pravodobna optimizacija terapije rezultirala je kliničkim poboljšanjem i značajnim padom NT-proBNP-a (922 ng/L), što korelira s poboljšanjem hemodinamskog statusa pacijenta.

Zaključak: Prikazani slučaj potvrđuje važnost sustavnog ambulantnog pristupa u zbrinjavanju starijih bolesnika s fibrilacijom atrija i sumnjom na HFpEF. Individualizirana terapija, redovito praćenje kliničkog statusa i biomarkera te prilagodba liječenja prema podnošljivosti terapije ključni su za postizanje stabilnog kliničkog ishoda. Osobe starije od 65 godina često nemaju pristup redovitim godišnjim sistematskim pregledima koji su uobičajeni za radno aktivnu populaciju, što povećava ulogu i odgovornost liječnika obiteljske medicine. Pravovremenim aktivnim otkrivanjem fibrilacije atrija u ovoj populaciji moguće je započeti odgovarajuće liječenje i prevenirati brojne potencijalno fatalne tromboembolijske događaje, uključujući moždani udar i srčano zatajenje uzrokovano fibrilacijom atrija.

LITERATURA:

1. Rienstra M, Tzeis S, Bunting KV, et al. Spotlight on the 2024 ESC/EACTS management of atrial fibrillation guidelines: 10 novel key aspects. Europace. 2024;26(12):euae298. doi:10.1093/europace/euae298
2. Wolfes J, Eckardt L. Die 2024 ESC-Leitlinien zum Management von Vorhofflimmern : AF-CARE als neues Credo [The 2024 ESC guidelines for management of atrial fibrillation : AF-CARE as new credo]. Herzschrittmacherther Elektrophysiol. 2024;35(4):318-323. doi:10.1007/s00399-024-01053-7
3. Hättasch R, Tscholl V, Hindricks G, Dagres N. European Society of Cardiology(ESC)-Leitlinie Vorhofflimmern 2024 : Was ist neu, und was ist wichtig? [European Society of Cardiology (ESC) guidelines on atrial fibrillation 2024 : What is new and what is important?]. Herz. 2025;50(1):3-7. doi:10.1007/s00059-024-05287-6

Newly Diagnosed Atrial Fibrillation with Signs of Heart Failure

Vjera Mihaljević[1], Matea Matić Ličanin[2], Ivana Slišković[2,3]

1. Specialist Family Medicine Practice Marinela Somek, MD, Family Medicine Specialist, Karlovac, Croatia
2. Faculty of Medicine Osijek, Josip Juraj Strossmayer University of Osijek, Osijek, Croatia
3. Osijek-Baranja County Health Center, Osijek, Croatia

Key words: atrial fibrillation; heart failure; hypertension; family practice
Correspondence address: Vjera Mihaljević, J.J. Huttlera 4, Osijek
E-mail: nincevicv@gmail.com
ORCID: Vjera Mihaljević: 0000-0002-5190-2202
Matea Matić Ličanin: 0000-0003-4429-3135
Ivana Slišković: 0009-0004-9770-7113

Introduction with Aim: Atrial fibrillation (AF) is the most common cardiac arrhythmia and is associated with substantial morbidity and mortality. In 2024, the European Society of Cardiology (ESC) and the European Association for Cardio-Thoracic Surgery (EACTS) introduced the AF-CARE framework, a structured approach to AF management encompassing comorbidity and risk factor control, stroke and thromboembolism prevention, symptom control, and continuous clinical evaluation. The aim of this case report is to present an outpatient diagnostic and therapeutic approach to the management of a patient with arterial hypertension, atrial fibrillation, and clinical and biochemical features of early heart failure with preserved ejection fraction (HFpEF), emphasizing individualized therapy and monitoring by a family physician.

Case Report: An 83-year-old male patient visited family medicine practice accompanied by his daughter due to elevated blood pressure values, occasional dizziness, tremor, and mild ankle edema, without dyspnea. His medical history included arterial hypertension and benign prostatic hyperplasia, treated with perindopril/indapamide, moxonidine, and doxazosin. On examination, the patient was conscious, oriented, afebrile, and hemodynamically stable (BP 140/75 mmHg), with no signs of respiratory distress. Cardiac auscultation revealed an irregular rhythm, and ECG confirmed atrial fibrillation with a ventricular rate of approximately 90 bpm. Further diagnostic work-up was initiated (NT-proBNP, Holter ECG), and bisoprolol 2.5 mg was prescribed. Follow-up results showed elevated NT-proBNP (2143 ng/L) and persistent atrial fibrillation with an average heart rate of 76 bpm. Due to increased thromboembolic risk, dabigatran etexilate (110 mg twice daily) and eplerenone 25 mg were introduced. Echocardiography demonstrated preserved left ventricular systolic function at the lower limit of normal (EF 51%), biatrial enlargement, moderate mitral and tricuspid regurgitation, and diastolic dysfunction. During follow-up, antihypertensive therapy was reduced, and due to intolerance, dabigatran was replaced with edoxaban 60 mg. Control laboratory tests showed stable renal function (eGFR 77 mL/min/1.73 m²) and a significant decrease in NT-proBNP levels (922 ng/L), accompanied by clinical improvement.

Discussion: Atrial fibrillation and HFpEF frequently coexist in the elderly population, and the diagnosis of HFpEF is often challenging due to nonspecific symptoms. Elevated NT-proBNP levels, atrial enlargement, and diastolic dysfunction represent key diagnostic elements. In the presented case, timely optimization of therapy resulted in clinical improvement and a significant reduction in NT-proBNP levels (922 ng/L), correlating with improved hemodynamic status.

Conclusion: This case highlights the importance of a systematic outpatient approach in the management of elderly patients with atrial fibrillation and suspected HFpEF. Individualized therapy, regular monitoring of clinical status and biomarkers, and treatment adjustments based on tolerability are essential for achieving stable clinical outcomes. Individuals over 65 years of age often lack access to routine annual health examinations commonly available to the working population, which further increases the role and responsibility of family physicians. Early and proactive detection of atrial fibrillation in this population enables timely initiation of appropriate treatment and prevention of potentially fatal thromboembolic events, including stroke and atrial fibrillation–related heart failure.

REFERENCES:

1. Rienstra M, Tzeis S, Bunting KV, et al. Spotlight on the 2024 ESC/EACTS management of atrial fibrillation guidelines: 10 novel key aspects. Europace. 2024;26(12):euae298. doi:10.1093/europace/euae298
2. Wolfes J, Eckardt L. Die 2024 ESC-Leitlinien zum Management von Vorhofflimmern : AF-CARE als neues Credo [The 2024 ESC guidelines for management of atrial fibrillation : AF-CARE as new credo]. Herzschrittmacherther Elektrophysiol. 2024;35(4):318-323. doi:10.1007/
3. Hättasch R, Tscholl V, Hindricks G, Dagres N. European Society of Cardiology(ESC)-Leitlinie Vorhofflimmern 2024 : Was ist neu, und was ist wichtig? [European Society of Cardiology (ESC) guidelines on atrial fibrillation 2024 : What is new and what is important?]. Herz. 2025;50(1):3-7. doi:10.1007/s00059-024-05287-6

Hipertenzija u dječjoj dobi

Mateja Mikić Vulelija[1], Manuela Tomčić[2]

1. Dom zdravlja Zadarske županije
2. Specijalistička ordinacija obiteljske medicine Manuela Tomčić, Zadar

Ključne riječi: dječja hipertenzija, sekundarna hipertenzija, stenoza renalne arterije, obiteljska medicina
Adresa za dopisivanje: Trg hrvatske mladeži 2e, 23420 Benkovac
E adresa: mateja.mikic88@gmail.com
ORCID: Mateja Mikić Vulelija: 0009-0004-7599-430X
Manuela Tomčić: 0009-0003-6188-0961

Uvod s ciljem: Arterijska hipertenzija u dječjoj dobi definirana je povišenim vrijednostima sistoličkog i/ili dijastoličkog krvnog tlaka iznad 95. percentila za dob, spol i tjelesnu visinu, potvrđenim ponovljenim mjerenjima. Za razliku od odrasle populacije, arterijska hipertenzija u djece najčešće ima sekundarni uzrok, osobito u mlađoj životnoj dobi. Najčešći uzroci su bubrežne i renovaskularne bolesti, dok su kardiovaskularni i endokrini uzroci rjeđi. Neliječena hipertenzija može dovesti do oštećenja ciljnih organa, osobito srca, bubrega i mozga. Cilj rada je prikazati slučaj renovaskularne hipertenzije u dječaka te istaknuti važnost pravodobne dijagnostike i liječenja.

Prikaz slučaja: Dječak u dobi od 11 godina dolazi u pratnji majke zbog učestalih glavobolja, povremeno otežanog disanja, bolova u prsima te epizoda epistakse. Tijekom ambulantne obrade u više navrata zabilježene su povišene vrijednosti arterijskog tlaka. Tjelesna masa iznosila je 47,2 kg (88. centila), tjelesna visina 144 cm (47. centila), uz indeks tjelesne mase od 22,8 kg/m² (94. centila). Izmjerene vrijednosti tlaka bile su 130/85 mmHg, što odgovara vrijednostima iznad 95. percentila. Zbog sumnje na sekundarnu hipertenziju dječak je upućen pedijatrijskom nefrologu i hospitaliziran. CT angiografijom potvrđena je kritična stenoza desne renalne arterije uz dvostruku renalnu arteriju lijevo. Utvrđena je hipertrofija lijeve klijetke. Uvedena je antihipertenzivna terapija (nifedipin 1x10 mg ujutro i doksazosin mesilat 1x1 mg), a potom učinjena perkutana transluminalna angioplastika desne renalne arterije, nakon čega je postignuta dobra regulacija tlaka.

Rasprava: Povišeni arterijski tlak u djece i adolescenata predstavlja sve značajniji javnozdravstveni problem. Meta-analize pokazuju da se javlja u približno 8–14 % djece i adolescenata, s višim vrijednostima u zemljama južne Europe, uključujući Hrvatsku. U dječjoj dobi hipertenzija je najčešće sekundarna, a renovaskularna hipertenzija ima važno mjesto među bubrežnim uzrocima. Smanjen protok krvi kroz bubrežnu arteriju dovodi do aktivacije renin-angiotenzin-aldosteronskog sustava i trajnog porasta tlaka. Pravodobno prepoznavanje ključno je za sprječavanje oštećenja ciljnih organa. U djece s hemodinamski značajnom stenozom renalne arterije perkutana transluminalna angioplastika omogućuje dobru regulaciju tlaka i povoljnu prognozu.

Zaključak: Prikazani slučaj naglašava važnost rane dijagnostike arterijske hipertenzije u dječjoj dobi te razmišljanja o sekundarnim uzrocima. Pravodobno endovaskularno liječenje omogućilo je dobru regulaciju arterijskog tlaka i povoljnu dugoročnu prognozu uz redovito praćenje bolesnika.

LITERATURA:

1. Flynn JT, Kaelber DC, Baker-Smith CM, et al. Clinical Practice Guideline for Screening and Management of High Blood Pressure in Children and Adolescents. Pediatrics. 2017;140(3):e20171904.
2. Lurbe E, Agabiti-Rosei E, Cruickshank JK, et al. 2016 European Society of Hypertension guidelines for the management of high blood pressure in children and adolescents. J Hypertens. 2016;34(10):1887–1920.
3. 3ESH Guidelines for the management of arterial hypertension. J Hypertens. 2023.
4. Hrvatsko društvo za hipertenziju. Praktične smjernice za dijagnostiku i liječenje arterijske hipertenzije u djece i adolescenata. Medix. 2019.

Hypertension in Childhood

Mateja Mikić Vulelija[1], Manuela Tomčić[2]

1. Health Center of Zadar County
2. Specialist Family Medicine Practice Manuela Tomčić, Zadar

Key words: pediatric hypertension, secondary hypertension, renal artery stenosis, family physician
Correspondence address: Trg hrvatske mladeži 2e, 23420 Benkovac
E-mail: mateja.mikic88@gmail.com
ORCID: Mateja Mikić Vulelija: 0009-0004-7599-430X
Manuela Tomčić: 0009-0003-6188-0961

Introduction with aim: Arterial hypertension in childhood is defined as elevated systolic and/or diastolic blood pressure values above the 95th percentile for age, sex, and height, confirmed by repeated measurements. Unlike in the adult population, arterial hypertension in children most often has a secondary cause, particularly at a younger age. The most common causes are renal and renovascular diseases, while cardiovascular and endocrine causes are less frequent. Untreated hypertension may lead to target organ damage, especially affecting the heart, kidneys, and brain. The aim of this paper is to present a case of renovascular hypertension in a boy and to emphasize the importance of timely diagnosis and treatment of hypertension in children.

Case report: An 11-year-old boy presented with his mother due to frequent headaches, occasional shortness of breath, chest pain, and episodes of epistaxis. During outpatient evaluation, elevated blood pressure values were recorded on several occasions. His body weight was 47.2 kg (88th percentile), height 144 cm (47th percentile), with a body mass index of 22.8 kg/m² (94th percentile). Measured blood pressure values were 130/85 mmHg, corresponding to values above the 95th percentile for age, sex, and height. Due to suspicion of secondary hypertension, the patient was referred to a pediatric nephrologist and hospitalized. CT angiography confirmed critical stenosis of the right renal artery, with a double renal artery on the left side. Left ventricular hypertrophy was detected. Antihypertensive therapy was initiated (nifedipine 10 mg once daily and doxazosin mesylate 1 mg once daily). followed by percutaneous transluminal angioplasty of the right renal artery, after which good blood pressure control was achieved.

Discussion: Elevated blood pressure in children and adolescents represents an increasingly important public health issue. Meta-analyses show that it occurs in approximately 8–14% of children and adolescents, with higher prevalence in Southern European countries, including Croatia. In childhood, hypertension is most often secondary, with renovascular hypertension being an important renal cause. Reduced blood flow through the renal artery leads to activation of the renin–angiotensin–aldosterone system, resulting in sustained elevation of blood pressure. Early recognition is crucial to prevent target organ damage. In children with hemodynamically significant renal artery stenosis, percutaneous transluminal angioplasty enables effective blood pressure control and a favorable prognosis.

Conclusion: This case report highlights the importance of early diagnosis of arterial hypertension in childhood and the need to consider secondary causes. Timely endovascular treatment enabled effective blood pressure control and a favorable long-term prognosis with regular follow-up.

REFERENCES:

1. Flynn JT, Kaelber DC, Baker-Smith CM, et al. Clinical Practice Guideline for Screening and Management of High Blood Pressure in Children and Adolescents. Pediatrics. 2017;140(3):e20171904.
2. Lurbe E, Agabiti-Rosei E, Cruickshank JK, et al. 2016 European Society of Hypertension guidelines for the management of high blood pressure in children and adolescents. J Hypertens. 2016;34(10):1887–1920.
3. 3ESH Guidelines for the management of arterial hypertension. J Hypertens. 2023.
4. Hrvatsko društvo za hipertenziju. Praktične smjernice za dijagnostiku i liječenje arterijske hipertenzije u djece i adolescenata. Medix. 2019.

Kašalj kao simptom i znak poremećaja probavnog sustava – prikaz slučaja

Mirna Mišković[1], Aleksandar Potkrajac[1]

1. Dom zdravlja Osječko-baranjske županije, Osijek

Ključne riječi: kašalj, liječnik obiteljske medicine, anamneza, antibiotik, poremećaj probavnog sustava
Adresa za dopisivanje: Mirna Mišković, Park kralja Petra Krešimira IV 6, 31000 Osijek
E adresa: mmirna305@gmail.com
ORCID: Mirna Mišković: 0009-0006-0246-1128
Aleksandar Potkrajac: 0009-0004-6051-4203

Uvod s ciljem: Kašalj je jedan od najčešćih simptoma u ordinaciji liječnika obiteljske medicine te najčešće upućuje na respiratornu patologiju. Međutim, u njegovoj podlozi ponekad mogu biti i bolesti drugih organskih sustava. Ovim prikazom slučaja želi se ukazati kako kašalj može biti simptom poremećaja i bolesti probavnog sustava te kao takav zahtijeva znatno drugačiji pristup u dijagnostici i liječenju.

Prikaz slučaja: Šesnaestogodišnji pacijent u pratnji oca javio se u ambulantu liječnika obiteljske medicine zbog suhog, nadražajnog kašlja koji traje oko dva tjedna. Tijekom cijelog razdoblja bio je afebrilan, bez drugih općih simptoma. Negira prisutnost mučnine i povraćanja, stolice su redovite i urednog izgleda. Negira konzumaciju duhanskih proizvoda i alkohola, roditelji su nepušači. U anamnezi se navodi redovita konzumacija energetskih pića. Kašalj je izraženiji u večernjim i noćnim satima, osobito nakon kasne večere i u ležećem položaju, pri čemu roditelji navode da ga noću čuju kako kašlje. Prehrambene navike su neredovite; pacijent ne doručkuje, a najveći obrok u danu je večera. Pohađa srednju strukovnu školu te je od jeseni počeo redovito ići u teretanu. Do sada nije teže bolovao, a obiteljska anamneza je neupadna. U posljednjih godinu i pol do dvije u medicinskoj dokumentaciji bilježi se učestala pojava suhog kašlja, tri do četiri puta godišnje (u jesenskom i proljetnom razdoblju te tijekom zimskih praznika), koji je u više navrata liječen azitromicinom i butamiratom, a u dva navrata i antihistaminikom. Kliničkim pregledom utvrđen je uredan opći status, pacijent je uredne osteomuskularne građe za dob. Postavljena je radna dijagnoza dispepsije sumnjive na refluksnu etiologiju. Savjetovane su nefarmakološke mjere: prilagodba prehrane s redovitim obrocima (prvi obrok unutar jednog sata od buđenja, zadnji obrok najkasnije dva do tri sata prije odlaska na počinak), promjene načina jedenja (sporije konzumiranje hrane, manji zalogaji, temeljito žvakanje), izbjegavanje napitaka koji sadrže kofein te podizanje uzglavlja tijekom spavanja. Laboratorijskim pretragama krvi isključena je alergijska podloga kašlja, a analizom stolice dobiven je negativan nalaz na Helicobacter pylori kao mogući uzrok dispepsije. Razgovorom s pacijentom isključen je psihogeni uzrok kašlja. Nakon dva tjedna provođenja savjetovanih mjera i simptomatske terapije, kašalj se značajno smanjio, više ne ometa san te pacijent može uredno funkcionirati u svakodnevnim obvezama.

Rasprava: Kašalj se definira kao refleksna ili voljna, brza ili snažna ekspiracija kojoj prethode duboki inspirij, zatvaranje glotisa i kontrakcija ekspiracijskih mišića. Nastaje podražajem receptora tusigenih zona respiratornog epitela, ponajprije u traheji i velikim bronhima. Takav podražaj mogu izazvati upala, alergija, patološke izrasline, udisanje dima, magle ili hladnog zraka, kao i aspiracija sline, hrane ili povraćenog želučanog sadržaja. Podražaj se prenosi aferentnim senzornim vlaknima parasimpatičkih živaca (n. vagus, n. glossopharyngeus i n. trigeminus), čija iritacija može biti uzrokovana i bolestima trbušnih organa.

Zaključak: Prikazan je pacijent s recidivirajućim suhim kašljem koji je u više navrata liječen kombinacijom antibiotika, antitusika i antihistaminika. Uzimanje detaljne osobne anamneze i pažljiva klinička procjena pokazali su kako je kašalj u ovog pacijenta bio posljedica poremećaja u gornjem dijelu probavnog sustava, najvjerojatnije gastroezofagealnog refluksa. Sukladno tome, terapijski pristup je modificiran te je izbjegnuto daljnje nepotrebno propisivanje i uzimanje farmakoterapije, osobito antibiotika.

LITERATURA:

1. Mardešić Duško i suradnici; Pedijatrija, Zagreb: Školska Knjiga, 2016.
2. Mihić Damir; Jure Mirat; Aleksandar Včev, Interna medicina, Osijek: Medicinski fakultet, 2021.
3. Vrhovac Božidar; Branimir Jakšić; Željko Reiner; Boris Vucelić, Interna medicina, Zagreb: Naklada Ljevak, 2008.
4. (Tomas Adrijana) „Kronični kašalj – pristup u OOM“, KOHOM Primorsko – goranske županije Naši algoritmi, (<https://drive.google.com/file/d/1UyzI0HFJCAAE-QW2rHezbCciPVtps0j4/view?usp=sharing>), 10.01.2025.

Cough as a symptom and sign of digestive system disorders – case report

Mirna Mišković[1], Aleksandar Potkrajac[1]

1. Osijek – Baranja County Health Center, Osijek

Key words: cough, family medicine physician, medical history, antibiotics, gastrointestinal disorder
Correspondence address: Mirna Mišković, Park kralja Petra Krešimira IV 6, 31000 Osijek
E-mail: mmirna305@gmail.com
ORCID: Mirna Mišković: 0009-0006-0246-1128
Aleksandar Potkrajac: 0009-0004-6051-4203

Introduction and Aim: Cough is one of the most common symptoms encountered in family medicine practice and is most often associated with respiratory diseases. However, its underlying cause may sometimes originate from disorders of other organ systems. The aim of this case report is to emphasize cough as a possible symptom of gastrointestinal disorders, which consequently requires a substantially different diagnostic and therapeutic approach.

Case Report: A 16-year-old male patient presented to a family physician accompanied by his father due to a dry, irritating cough lasting approximately two weeks. Throughout this period, the patient remained afebrile and reported no other general symptoms. He denied nausea and vomiting; bowel movements were regular and normal in appearance. He denied the use of tobacco products and alcohol, and his parents were non-smokers. Medical history revealed regular consumption of energy drinks. The cough was more pronounced in the evening and at night, particularly after late meals and in the supine position, with parents reporting nocturnal coughing episodes. Dietary habits were irregular; the patient skipped breakfast, while dinner represented the largest meal of the day. He attended a vocational secondary school and had started regular gym training in the autumn. He had no significant past medical history, and family history was unremarkable. Over the previous one and a half to two years, medical records documented recurrent episodes of dry cough occurring three to four times per year (during autumn, winter holidays, and spring), which were repeatedly treated with azithromycin and butamirate, and on two occasions with antihistamines. Clinical examination revealed a normal general condition and an age-appropriate musculoskeletal build. A working diagnosis of dyspepsia suspicious for reflux-related etiology was established. Non-pharmacological measures were recommended, including dietary modification with regular meals (first meal within one hour after waking, last meal at least two to three hours before bedtime), changes in eating habits (slow eating, smaller bites, thorough chewing), avoidance of caffeine-containing beverages, and elevation of the head of the bed during sleep. Laboratory blood tests excluded an allergic cause of the cough, while stool analysis was negative for Helicobacter pylori as a possible cause of dyspepsia. A psychogenic cause of cough was excluded through patient interview. After two weeks of implementing the recommended measures and symptomatic treatment, the cough significantly decreased, no longer interfered with sleep, and the patient was able to function normally in daily activities.

Discussion: Cough is defined as a reflex or voluntary, rapid and forceful expiration preceded by deep inspiration, closure of the glottis, and contraction of expiratory muscles. It results from stimulation of cough receptors located in tussigenic zones of the respiratory epithelium, primarily in the trachea and large bronchi. Such stimulation may be caused by inflammation, allergy, pathological growths, inhalation of smoke, fog, or cold air, as well as aspiration of saliva, food, or gastric contents. The stimulus is transmitted via afferent sensory fibers of parasympathetic nerves (vagus, glossopharyngeal, and trigeminal nerves), which may also be irritated by diseases of abdominal organs.

Conclusion: This case report presents a patient with recurrent dry cough who had been repeatedly treated with combinations of antibiotics, antitussives, and antihistamines. A thorough medical history and careful clinical assessment revealed that the cough was caused by a disorder of the upper gastrointestinal tract, most likely gastroesophageal reflux. Accordingly, the therapeutic approach was modified, thereby avoiding further unnecessary prescription and use of pharmacotherapy, particularly antibiotics.

REFERENCES:

1. Mardešić Duško i suradnici; Pedijatrija, Zagreb: Školska Knjiga, 2016.
2. Mihić Damir; Jure Mirat; Aleksandar Včev, Interna medicina, Osijek: Medicinski fakultet, 2021.
3. Vrhovac Božidar; Branimir Jakšić; Željko Reiner; Boris Vucelić, Interna medicina, Zagreb: Naklada Ljevak, 2008.
4. (Tomas Adrijana) „Kronični kašalj – pristup u OOM“, KOHOM Primorsko – goranske županije Naši algoritmi, (<https://drive.google.com/file/d/1UyzI0HFJCAAE-QW2rHezbCciPVtps0j4/view?usp=sharing>), 10.01.2025.

Psychosomatic Symptoms in Children Exposed to Peer Violence: A Cross-Sectional Study in the Federation of Bosnia and Herzegovina

Marnela Palameta[1], Ankica Mijić Marić[1], Edita Černy Obrdalj[1], Amra Zalihić[1], Nina Pinjuh Markota[1], Boženka Galić Tirić[2], Kristina Bevanda[3]

1. University of Mostar, Faculty of Medicine, Chair of Family Medicine
2. University of Mostar, Faculty of Medicine, Chair of Occupational Medicine
3. University of Mostar, Faculty of Medicine, Chair of Epidemiology

Key words: Bullying; Mental health; Peer violence; Primary school students; Psychosomatic disorders.
E-mail: marnela.palameta@mef.sum.ba
ORCID: Marnela Palameta: 0000-0001-9456-9465
Ankica Mijić Marić: 0000-0002-4346-9402
Edita Černy Obrdalj: 0000-0002-1445-1393
Amra Zalihić: 0000-0003-1838-1465
Nina Pinjuh Markota: 0000-0002-6063-8095
Boženka Galić Tirić: 0000-0003-0622-1376
Kristina Bevanda: 0000-0003-1669-8872

Introduction with aim: Bullying is a widespread issue among adolescents and has been linked to adverse health outcomes. This study aimed to examine its prevalence in primary schools in the Federation of Bosnia and Herzegovina (FBiH), explore gender differences, and assess associations with psychosomatic symptoms.

Methods: This cross-sectional study was conducted among students in grades seven to nine. Participants were classified into four groups based on their involvement in bullying: uninvolved, victims, bullies, and bully/victims. Validated self-report questionnaires were used to measure exposure to bullying and the frequency and impact of psychosomatic symptoms.

Results: In total, 13.3% of students identified as victims, 3.1% as bullies, and 4.4% as both. Victims and bully/victims reported significantly higher rates of psychosomatic complaints, including pain, fatigue, gastrointestinal problems, pseudoneurological symptoms, and cardiovascular complaints, compared to uninvolved students. Bully/victims showed the highest overall burden, with symptoms most frequently interfering with daily functioning.

Conclusion: Bullying involvement is strongly associated with psychosomatic distress among adolescents. These findings emphasise the need for school-based prevention programs and staff training to recognise somatic signals of distress. Integrating simple screening tools into school and primary healthcare services is essential to ensure early identification and timely support for affected students.

REFERENCES:

1. Inchley J, Currie D, Budisavljevic S, Torsheim T, Jastad A, Cosma A, Spotlight on adolescent health and well-being. Findings from the 2017/2018 Health Behaviour in School-aged Children (HBSC) survey in Europe and Canada. International report [Internet] Copenhagen: WHO Regional Office for Europe; 2020. [cited 2025 Jan 29]. Available from: https://www.who.int/europe/publications/i/item/9789289055017
2. Moore SE, Norman RE, Suetani S, Thomas HJ, Sly PD, Scott JG. Consequences of bullying victimization in childhood and adolescence: A systematic review and meta-analysis. World J Psychiatry. 2017;7(1):60–76. doi: 10.5498/wjp.v7.i1.60.
3. Černi Obrdalj E, Rumboldt M. Bullying among school children in postwar Bosnia and Herzegovina: Cross-sectional study. Croat Med J. 2008;49(4):528–535. doi: 10.3325/cmj.2008.4.528.
4. Gini G, Pozzoli T. Association between bullying and psychosomatic problems: A meta-analysis. Pediatrics. 2009;123(3):1059–1065. doi: 10.1542/peds.2008-1215.
5. Vulić-Prtorić A. Psychosomatic Symptoms Scale: Manual, normative data and questionnaires. Zadar: University of Zadar; 2019.

Utjecaj GLP-1RA na plodnost

Luka Pavlinac[1], Danijela Mosković[2], Mirta Peček[3]

1. Dom zdravlja Zagreb Centar
2. Specijalna bolnica za medicinsku rehabilitaciju Krapinske Toplice
3. Dom zdravlja Zagreb Zapad

Ključne riječi: agonisti GLP-1 receptora, plodnost, pretilost
Adresa za dopisivanje: Mirta Peček, Nova cesta 85a, 10000 Zagreb
E adresa: mirta.pec@gmail.com
ORCID: Luka Pavlinac: 0009-0003-2382-6163
Danijela Mosković: 0000-0003-1691-6008
Mirta Peček: 0000-0003-4350-4025

Uvod s ciljem: GLP-1RA (agonisti receptora glukagonu sličnog peptida-1) koriste se u liječenju šećerne bolesti tipa II i s njom povezane pretilosti. Svoj terapijski učinak ostvaruju poticanjem glukozno ovisnog lučenja inzulina, smanjenjem apetita te odgađanjem pražnjenja želuca. Uz metaboličke koristi, sve se više istražuje i njihov mogući utjecaj na reproduktivno zdravlje. Neplodnost pogađa oko 10–12% parova diljem svijeta i često je povezana s endokrinometaboličkim poremećajima, osobito pretilošću i inzulinskom rezistencijom. Smanjenje prekomjerne tjelesne mase, kao i poboljšanje metaboličkog profila, potencijalno mogu doprinijeti vraćanju hormonalne ravnoteže i poboljšanju fertiliteta. Cilj je ovog rada prikazati najnovije spoznaje o djelovanju GLP-1RA na plodnost, uključujući moguće mehanizme, spolno specifične učinke i klinički značaj.

Rasprava: Pretražena je elektronička baza podataka PubMed koristeći ključne riječi „GLP-1 receptor agonist“ i „fertility“. Pretraživanjem je pronađeno 26 cjelovitih radova objavljenih između 2015. i 2025. godine, od kojih je 22 uključeno u ovaj pregled. Ostali radovi isključeni su jer nisu izravno obrađivali problem plodnosti.

Klinička i eksperimentalna istraživanja pokazuju da GLP-1RA mogu mijenjati reproduktivni metabolizam u oba spola, djelomično posredovano poboljšanjem osjetljivosti na inzulin, smanjenjem upale te modulacijom steroidogeneze. U žena su zabilježene povećane koncentracije folikulostimulirajućeg hormona (FSH) i globulina koji veže spolne hormone (SHBG), kao i snižene razine androgena, što je osobito značajno kod hiperandrogenih stanja. Također se navode protuupalni i antifibrotski učinci na jajnik i endometrij, što može doprinijeti poboljšanju kvalitete ovulacije i implantacije. Posebno je istaknuta uloga semaglutida u žena sa sindromom policističnih jajnika (PCOS). Farmakološki uvjetovane promjene u osi hipotalamus–hipofiza–jajnici uključuju porast luteinizirajućeg hormona (LH) kada je njegovo lučenje prethodno inhibirano povišenim estrogenom, odnosno normalizaciju pretjerano povišenog LH prisutnog kod hiperinzulinemije. Ovi mehanizmi povećavaju stopu ovulacije, učestalost menstruacijskih ciklusa i mogućnost prirodnog začeća. Dodatnu korist donosi smanjenje tjelesne mase, što je ključno u terapiji PCOS-a. U muškaraca GLP-1RA uzrokuju povećanje koncentracije testosterona, poboljšanje parametara spermiograma (osobito motiliteta i ukupne aktivnosti spermija) te moguće izravno djelovanje putem ekspresije GLP-1 receptora na spermijima. Također se navodi protuupalni i antifibrotski učinak na testise, što bi moglo imati dugoročan pozitivan učinak na spermatogenezu.

Zaključak: Iako GLP-1RA pokazuju obećavajuće učinke na plodnost u oba spola, trenutačni broj istraživanja je ograničen, a postojeća su često heterogena po dizajnu i vremenu praćenja. Stoga se ne može sa sigurnošću zaključiti proizlaze li pozitivni učinci primarno iz gubitka tjelesne mase, poboljšanja metaboličkog statusa ili izravnog djelovanja na reproduktivne organe i hormonalnu regulaciju. Buduća istraživanja trebala bi uključiti veće uzorke, dulje praćenje i diferencijaciju učinaka prema tjelesnoj masi, dozi i trajanju terapije. Za obiteljskog liječnika ova tema je posebno važna jer omogućava rano prepoznavanje reproduktivnih i metaboličkih problema, informirano savjetovanje bolesnika koji planiraju trudnoću te koordinaciju terapije s drugim specijalistima.

LITERATURA:

1. Cena H, Chiovato L, Nappi RE. Obesity, Polycystic Ovary Syndrome, and Infertility: A New Avenue for GLP-1 Receptor Agonists. J Clin Endocrinol Metab. 2020 Aug 1;105(8):e2695–709. doi: 10.1210/clinem/dgaa285. PMID: 32442310; PMCID: PMC7457958.
2. Papaetis GS, Kyriacou A. GLP-1 receptor agonists, polycystic ovary syndrome and reproductive dysfunction: Current research and future horizons. Adv Clin Exp Med. 2022 Nov;31(11):1265-1274. doi: 10.17219/acem/151695. PMID: 35951627., 10.1016/j.fertnstert.2022.04.027. Epub 2022 Jun 13. PMID: 35710599.
3. Rago V, De Rose D, Santoro M, Panza S, Malivindi R, Andò S, D'Agata R, Aquila S. Human Sperm Express the Receptor for Glucagon-like Peptide-1 (GLP-1), Which Affects Sperm Function and Metabolism. Endocrinology. 2020 Apr 1;161(4):bqaa031. doi: 10.1210/endocr/bqaa031. PMID: 32157297.
4. Bader S, Bhatti R, Mussa B, Abusanana S. A systematic review of GLP-1 on anthropometrics, metabolic and endocrine parameters in patients with PCOS. Womens Health (Lond). 2024 Jan-Dec;20:17455057241234530. doi: 10.1177/17455057241234530. PMID: 38444070; PMCID: PMC10916466.
5. Goldberg AS, Boots CE. Treating obesity and fertility in the era of glucagon-like peptide 1 receptor agonists. Fertil Steril. 2024 May 27:S0015-0282(24)00470-9. doi: 10.1016/j.fertnstert.2024.05.154. Epub ahead of print. PMID: 38810863.

Effect of GLP-1RA on fertility

Luka Pavlinac[1], Danijela Mosković[2], Mirta Peček[3]

1. Health Center Zagreb Centar
2. Special Hospital for Medical Rehabilitation Krapinske Toplice
3. Health Center Zagreb West

Key words: fertility, GLP-1 receptor agonists, obesity
Correspondence address: Mirta Peček, Nova cesta 85a, 10000 Zagreb
E-mail: mirta.pec@gmail.com
ORCID: Luka Pavlinac: 0009-0003-2382-6163
Danijela Mosković: 0000-0003-1691-6008
Mirta Peček: 0000-0003-4350-4025

Introduction with Aim: GLP-1 receptor agonists (GLP-1RAs) are used in the treatment of type 2 diabetes mellitus and associated obesity. Their therapeutic effect is achieved by stimulating glucose-dependent insulin secretion, reducing appetite, and delaying gastric emptying. Beyond their metabolic benefits, the potential impact of GLP-1RAs on reproductive health is increasingly being investigated. Infertility affects approximately 10–12% of couples worldwide and is often associated with endocrine-metabolic disorders, particularly obesity and insulin resistance. Reduction of excessive body weight, along with improvements in the metabolic profile, may potentially help restore hormonal balance and improve fertility.

The aim of this paper is to present the most recent findings on the effects of GLP-1RAs on fertility, including possible mechanisms, sex-specific effects, and clinical relevance.

Discussion: A literature search was performed in the PubMed database using the keywords “GLP-1 receptor agonist” and “fertility.” Twenty-six full-text articles published between 2015 and 2025 were identified, of which 22 were included in this review. The remaining articles were excluded because they did not directly address fertility. Clinical and experimental studies indicate that GLP-1RAs can modulate reproductive metabolism in both sexes, partly mediated by improvements in insulin sensitivity, reduction of inflammation, and modulation of steroidogenesis. In women, increased concentrations of follicle-stimulating hormone (FSH) and sex hormone-binding globulin (SHBG), as well as decreased androgen levels, have been reported, which is particularly relevant in hyperandrogenic conditions. Anti-inflammatory and antifibrotic effects on the ovary and endometrium have also been described, which may contribute to improved ovulation quality and implantation. The role of semaglutide in women with polycystic ovary syndrome (PCOS) is particularly highlighted. Pharmacologically induced changes in the hypothalamic–pituitary–ovarian axis include an increase in luteinizing hormone (LH) when its secretion was previously suppressed by elevated estrogen or normalization of excessively high LH levels associated with hyperinsulinemia. These mechanisms increase the ovulation rate, menstrual cycle regularity, and the likelihood of natural conception. Additional benefits are derived from body weight reduction, which is crucial in PCOS management. In men, GLP-1RAs have been shown to increase testosterone concentrations, improve sperm parameters (particularly motility and overall sperm activity), and possibly exert direct effects via GLP-1 receptor expression on sperm. Anti-inflammatory and antifibrotic effects on the testes have also been reported, which may have long-term positive effects on spermatogenesis.

Conclusion: Although GLP-1RAs demonstrate promising effects on fertility in both sexes, the current number of studies is limited, and existing studies are often heterogeneous in design and duration. Therefore, it cannot be definitively concluded whether the observed benefits arise primarily from weight loss, improvements in metabolic status, or direct effects on reproductive organs and hormonal regulation. Future research should include larger cohorts, longer follow-up, and differentiation of effects according to body weight, dose, and duration of therapy. For primary care physicians, this topic is particularly important, as it enables early recognition of reproductive and metabolic issues, informed counseling of patients planning pregnancy, and coordination of therapy with other specialists.

REFERENCES:

1. Cena H, Chiovato L, Nappi RE. Obesity, Polycystic Ovary Syndrome, and Infertility: A New Avenue for GLP-1 Receptor Agonists. J Clin Endocrinol Metab. 2020 Aug 1;105(8):e2695–709. doi: 10.1210/clinem/dgaa285. PMID: 32442310; PMCID: PMC7457958.
2. Papaetis GS, Kyriacou A. GLP-1 receptor agonists, polycystic ovary syndrome and reproductive dysfunction: Current research and future horizons. Adv Clin Exp Med. 2022 Nov;31(11):1265-1274. doi: 10.17219/acem/151695. PMID: 35951627., 10.1016/j.fertnstert.2022.04.027. Epub 2022 Jun 13. PMID: 35710599.
3. Rago V, De Rose D, Santoro M, Panza S, Malivindi R, Andò S, D'Agata R, Aquila S. Human Sperm Express the Receptor for Glucagon-like Peptide-1 (GLP-1), Which Affects Sperm Function and Metabolism. Endocrinology. 2020 Apr 1;161(4):bqaa031. doi: 10.1210/endocr/bqaa031. PMID: 32157297.
4. Bader S, Bhatti R, Mussa B, Abusanana S. A systematic review of GLP-1 on anthropometrics, metabolic and endocrine parameters in patients with PCOS. Womens Health (Lond). 2024 Jan-Dec;20:17455057241234530. doi: 10.1177/17455057241234530. PMID: 38444070; PMCID: PMC10916466.
5. Goldberg AS, Boots CE. Treating obesity and fertility in the era of glucagon-like peptide 1 receptor agonists. Fertil Steril. 2024 May 27:S0015-0282(24)00470-9. doi: 10.1016/j.fertnstert.2024.05.154. Epub ahead of print. PMID: 38810863.

Procjena renalnog rizika u bolesnika sa šećernom bolesti tipa 2 panelom za kroničnu bubrežnu bolest u praksi liječnika obiteljske medicine u Hrvatskoj

Lidija Prlić[1,2], Lorena Stanojević[1,2], Tomislav Kurevija[1,2,3*]

1. Specijalistička ordinacija opće medicine dr. Lidija Prlić
2. Medicinski fakultet, Sveučilište J.J. Strossmayera u Osijeku
3. Dom zdravlja Osječko-baranjske županije

Ključne riječi: šećerna bolest tipa 2, kronična bubrežna bolest, SGLT2 inhibitori, obiteljska medicina
Adresa za dopisivanje: Tomislav Kurevija, Park kralja Petra Krešimira IV. 6, 31 000 Osijek
E adresa: tkurevija6@gmail.com
ORCID: Lidija Prlić: 0000-0003-2715-5240
Lorena Stanojević: 0000-0003-4075-8871
Tomislav Kurevija: 0000-0002-6691-5786

Uvod s ciljem: Šećerna bolest, uz hipertenziju, jedan je od najčešćih uzroka kronične bubrežne bolesti (KBB) u razvijenim zemljama. Noviji pristup liječenju šećerne bolesti, osim regulacije glikemije, usmjeren je i na kontrolu i liječenje kardiovaskularnih i renalnih rizika. Ipak, istraživanja upućuju na nedovoljno razvijenu svijest liječnika o važnosti procjene rizika i pravodobnog uvođenja lijekova s kardio- i reno-protektivnim učincima. S obzirom na njihovu ključnu ulogu u praćenju i liječenju šećerne bolesti, poseban je teret na liječnicima obiteljske medicine. U svrhu jednostavne i pravovremene procjene renalnih rizika dijabetičara, liječnicima obiteljske medicine u Hrvatskoj u e-kartonima pacijenata dostupan je panel za KBB. Ovim istraživanjem ispitali smo razine procjene renalnih rizika, korištenja dostupnih metoda procjene i propisanosti indicirane antidijabetičke terapije u specijalističkoj ordinaciji obiteljske medicine.

Ispitanici i metode: U istraživanju je obrađeno 59 slučajno odabranih pacijenata sa šećernom bolesti tipa 2, što čini trećinu pacijenata oboljelih od ove bolesti u ordinaciji. Detaljnim pretraživanjem e-kartona pacijenata prikupljeni su prethodno definirani podaci o općim karakteristikama bolesnika te parametrima praćenja šećerne bolesti i renalnog rizika. Upotrebom panela za procjenu KBB u kartonima pacijenata dobiveni su podaci o procjeni renalnog rizika pacijenata temeljenoj na KDIGO klasifikaciji.

Rezultati: Najviše ispitanika bilo je starosne dobi 60-80 godina, s prosječnom dobi 65 godina. 59,3% ispitanih su muškarci, a 62,7% živi u gradu. Prosječno trajanje šećerne bolesti je 7 godina. Rezultati upućuju na dobru regulaciju glikemije ispitanih pacijenata, sa medijanom HbA1c 6,7%. Gotovo svi ispitanici imaju pridruženu arterijsku hipertenziju. Metformin je lijek izbora kod svakog trećeg bolesnika. Ispunjavanjem panela za KBB, utvrđena je prisutnost KBB kod 15,3% pacijenata, svrstanih prema KDIGO klasifikaciji G1 5,1%, G2 6,8% te G3b 3,4%. Od navedenih pacijenata sa KBB podobnih za terapiju, 45% nema propisan indicirani inhibitor natrij-glukoznog kotransportnog proteina 2 (SGLT2).

Zaključak: Paneli za KBB važan su alat u rukama liječnika obiteljske medicine za rutinsku i kvalitetnu procjenu renalnog statusa kod rizičnih pacijenata, posebno onih sa šećernom bolesti. Potrebno je kontinuirano podizanje svijesti liječnika o važnosti korištenja panela i procjene renalnog rizika kod dijabetičara te pravodobno uvođenje novih renoprotektivnih terapijskih opcija.

LITERATURA:

1. Kurevija T, Šojat D, Bosnić Z, Mujaj B, Canecki Varžić S, Majnarić Trtica L. The Reasons for the Low Uptake of New Antidiabetic Drugs with Cardiovascular Effects-A Family Doctor Perspective. J Clin Med. 2024 Mar 12;13(6):1617.
2. Kidney Disease: Improving Global Outcomes (KDIGO) CKD Work Group. KDIGO 2024 Clinical Practice Guideline for the Evaluation and Management of Chronic Kidney Disease. Kidney Int. 2024 Apr;105(4S):S117-S314.

Renal risk assessment in individuals with type 2 diabetes using a chronic kidney disease panel in the practice of Croatian GPs

Lidija Prlić[1,2], Lorena Stanojević[1,2], Tomislav Kurevija[1,2,3*]

1. Specialist Practice of Family Medicine Dr. Lidija Prlić
2. Faculty of Medicine, J.J. Strossmayer University of Osijeku
3. Health Center of Osijek-Baranja County

Key words: type 2 diabetes, chronic kidney disease, SGLT2 inhibitors, family medicine
Correspondence address: Tomislav Kurevija, Park kralja Petra Krešimira IV. 6, 31 000 Osijek
E-mail: tkurevija6@gmail.com
ORCID: Lidija Prlić: 0000-0003-2715-5240
Lorena Stanojević: 0000-0003-4075-8871
Tomislav Kurevija: 0000-0002-6691-5786

Background with aim: Diabetes, along with hypertension, is one of the most common causes of chronic kidney disease (CKD) in developed countries. A newer approach to treating diabetes, in addition to glycemic control, is also focused on controlling and treating cardiovascular and renal risks. However, research indicates that physicians are not sufficiently aware of the importance of risk assessment and timely introduction of medications with cardio- and reno-protective effects. Given their key role in monitoring and treating diabetes, a special burden falls on general practitioners (GPs). For the purpose of simple and timely assessment of renal risks in diabetics, a CKD panel is available to GPs in Croatia in their e-medical records. In this study, we examined the levels of renal risk assessment, the use of available assessment methods, and the prescription of indicated antidiabetic therapy in a specialist family medicine practice.

Methods: The study included 59 randomly selected individuals with type 2 diabetes (T2D), which accounts for one third of patients with this disease in the practice. A detailed search of the patients' e-records collected previously defined data on the general characteristics of the patients and the parameters of monitoring diabetes and renal risk. Using the CKD assessment panel in the patient records, data on the assessment of the patients' renal risk based on the KDIGO classification were obtained.

Results: Most of the subjects were aged 60-80 years, with an average age of 65 years. 59.3% of the subjects were men, and 62.7% lived in the city. The average duration of diabetes was 7 years. The results indicate good glycemic control of the examined patients, with a median HbA1c of 6.7%. Almost all subjects have associated arterial hypertension. Metformin is the medication of choice in every third patient. By completing the CKD panel, the presence of CKD was determined in 15.3% of patients, classified according to the KDIGO classification G1 5.1%, G2 6.8% and G3b 3.4%. Of the listed patients with CKD eligible for therapy, 45% did not have an indicated sodium-glucose cotransporter 2 (SGLT2) inhibitor prescribed.

Conclusion: CKD panels are an important tool in the hands of GPs for routine and quality assessment of renal status in at-risk patients, especially those with T2D. It is necessary to continuously raise physician awareness of the importance of using the panel and assessing renal risk in individuals with T2D, and to introduce novel reno-protective therapeutic options in a timely manner.

REFERENCES:

1. Kurevija T, Šojat D, Bosnić Z, Mujaj B, Canecki Varžić S, Majnarić Trtica L. The Reasons for the Low Uptake of New Antidiabetic Drugs with Cardiovascular Effects-A Family Doctor Perspective. J Clin Med. 2024 Mar 12;13(6):1617.
2. Kidney Disease: Improving Global Outcomes (KDIGO) CKD Work Group. KDIGO 2024 Clinical Practice Guideline for the Evaluation and Management of Chronic Kidney Disease. Kidney Int. 2024 Apr;105(4S):S117-S314.

Kronični venski ulkus – dugotrajan problem, individualan pristup

Iva Roso[1], Marion Tomičić[1,2]

1. Dom zdravlja Splitsko-dalmatinske županije
2. Sveučilište u Splitu Medicinski fakultet, Katedra za obiteljsku medicinu

Ključne riječi: kronični ulkusi potkoljenica, kompresivna terapija, suradljivost pacijenta, multidisciplinarni pristup, infekcija rane, kvaliteta života
Adresa za dopisivanje: Vukovarska 23, 21276 Vrgorac
E adresa: iva.roso@dz-sdz.hr
ORCID: Iva Roso: 0009-0006-8142-9635
Marion Tomičić: 0000-0003-2148-3227

Uvod s ciljem: Kronični ulkusi potkoljenica predstavljaju značajan terapijski i organizacijski izazov, osobito kod starijih bolesnika sa slabijom suradljivošću. Dugotrajno trajanje bolesti, učestale infekcije i neadekvatna primjena kompresivne terapije mogu dovesti do ponavljanih pogoršanja i hospitalizacija. Cilj ovog prikaza slučaja je naglasiti važnost multidisciplinarnog pristupa, edukacije pacijenta i kontinuirane motivacije u postizanju bolje adherencije i poboljšanja kvalitete života.

Prikaz slučaja: Pacijentica, stara 80 godina, više od 40 godina boluje od kroničnih ulkusa potkoljenica. U anamnezi ima arterijsku hipertenziju, reguliranu fiksnom kombinacijom ramiprila i amlodipina (5mg/5mg 1x dnevno), uz dodatnu terapiju diosminom (500mg 2x dnevno) i analgeticima prema potrebi. U redovitoj je skrbi vaskularnog kirurga i dermatologa, s višekratno indiciranom kompresivnom terapijom koju nije dosljedno provodila. Tijekom posljednje dvije godine, zbog slabe suradljivosti i primjene nesterilnih prirodnih pripravaka, dolazilo je do učestalih pogoršanja s lokalnom upalom i gnojnim eksudatom, što je u više navrata zahtijevalo hospitalizaciju. Liječena je ponavljanim antibiotskim terapijama prema antibiogramu, uz kratkotrajna poboljšanja. Rane su redovito previjane sukladno uputama u sklopu kućne njege. Tijekom nenajavljenog kućnog posjeta pacijentica je zatečena bez kompresivne terapije, s ulkusima prekrivenima listovima kupusa, uz izražen neugodan miris. Žalila se na jake bolove, nesanicu i pojačanu sekreciju rana, nakon čega je uslijedilo novo pogoršanje bolesti i ponovna hospitalizacija. Po prijemu u bolnicu opisani su opsežni ulkusi koji su zahvaćali približno dvije trećine obje potkoljenice, cirkumferencijalno, s naglašenim rubovima, mjestimice prekrivenima fibrinskim naslagama i obilnom eksudacijom. Koža uz rubove bila je eritematozna, a obje potkoljenice edematozne, uz palpabilne periferne arterijske pulseve. U laboratorijskim nalazima zabilježena je blaga mikrocitna anemija te blago povišeni upalni parametri. Tijekom hospitalizacije provedena je antibiotska terapija, redovito previjanje rana uz debridman te je preporučena primjena obloga sa srebrom uz obaveznu kompresivnu terapiju. Uz kroničnu terapiju uvedeni su proteinski dodatak prehrani (Abound®) jednom dnevno te nadomjesna terapija željezom. Nakon otpusta pacijenticu naručujemo češće na kontrolne preglede, a obiteljski liječnik aktivno koordinira skrb multidisciplinarnog tima koji se sastoji od medicinskih sestara iz patronažne službe i ustanove za njegu u kući, te vasskularnog kirurga i dermatologa. Navedenim pristupom postignuto je poboljšanje adherencije na terapiju, jer je pacijentica postupno razvila bolji uvid u kroničnu prirodu bolesti te iskazala spremnost na suradnju. Nekoliko mjeseci kasnije navodi značajno smanjenje boli, bolju kontrolu simptoma i poboljšanu kvalitetu života.

Rasprava: Ovaj slučaj pokazuje koliko je u liječenju kroničnih ulkusa potkoljenica važna suradljivost pacijenta i dosljedna primjena kompresivne terapije. Unatoč pravilno vođenom medicinskom liječenju, nepridržavanje preporuka i korištenje nesterilnih pripravaka dovodili su do ponavljanih pogoršanja i hospitalizacija. Poboljšanje je postignuto tek uz intenzivniju komunikaciju, edukaciju i uključivanje multidisciplinarnog tima što potvrđuje činjenicu da uspješno liječenje kroničnih ulkusa zahtijeva individualiziran, multidisciplinarni pristup uz snažan naglasak na edukaciju i motivaciju pacijenta.

Zaključak: Redovita primjena kompresivne terapije, pravilna lokalna skrb i dobra suradnja s medicinskim timom ključni su za smanjenje boli, sprječavanje komplikacija i poboljšanje kvalitete života.

LITERATURA:

1. O'Meara S, Cullum N, Nelson EA, Dumville JC. Compression for venous leg ulcers. Cochrane Database Syst Rev. 2012 Nov 14;11(11):CD000265. doi: 10.1002/14651858.
2. Probst S, Saini C, Bobbink P, Frei A, Dudley-Martin F, Gafner S, Stern F, Gethin G. The Impact of a Multidisciplinary Patient Education Program on Venous Leg Ulcer Healing: A Randomised Controlled Trial. Wound Repair Regen. 2025 Sep-Oct;33(5):e70084. doi: 10.1111/wrr.70084.
3. Basta Juzbašić, A. i sur. Dermatovenerologija. Zagreb: Medicinska naklada;2014. str. 824.
4. Jurić O, Kevrić J. Kronične rane. Zagreb: Naklada Slap; 2019.str. 224.

Chronic venous ulcer – long-term problem, individual approach

Iva Roso[1], Marion Tomičić[1,2]

1. Dom zdravlja Splitsko-dalmatinske županije
2. Sveučilište u Splitu Medicinski fakultet, Katedra za obiteljsku medicinu

Key words: chronic leg ulcers, compression therapy, patient compliance, multidisciplinary approach, wound infection, quality of life
Correspondence address: Vukovarska 23, 21276 Vrgorac
E-mail: iva.roso@dz-sdz.hr
ORCID: Iva Roso: 0009-0006-8142-9635
Marion Tomičić: 0000-0003-2148-3227

Introduction and aim: Chronic leg ulcers represent a significant therapeutic and organizational challenge, particularly in elderly patients with poor adherence to treatment The long duration of the disease, recurrent infections, and inadequate application of compression therapy may lead to repeated exacerbations and hospitalizations. The aim of this case report is to emphasize the importance of a multidisciplinary approach, patient education, and continuous motivation in achieving better treatment adherence and improving quality of life.

Case report: An 80-year-old female patient has been suffering from chronic leg ulcers for more than 40 years. Her medical history includes arterial hypertension, controlled with a fixed-dose combination of ramipril and amlodipine (5mg/5mg once daily), along with additional therapy consisting of diosmin (500mg twice daily) and analgesics as needed. She has been under regular care of a vascular surgeon and a dermatologist. Compression therapy was repeatedly indicated but was not consistently applied by the patient. Over the past two years, due to poor adherence and the use of non-sterile natural remedies, frequent exacerbations occurred, accompanied by local inflammation and purulent exudate, requiring multiple hospitalizations. She was repeatedly treated with antibiotic therapy according to wound swab antibiograms, with only short-term improvement. The wounds were regularly dressed in accordance with recommendations as part of home nursing care. During an unannounced home visit, the patient was found without compression therapy, with ulcers covered by cabbage leaves and a pronounced unpleasant odor. She complained of severe pain, insomnia, and increased wound exudation, followed by further disease exacerbation and rehospitalization. Upon hospital admission, extensive circumferential ulcers involving approximately two-thirds of both lower legs were observed, with prominent margins, fibrin deposits, and abundant exudation. The periwound skin was erythematous, and both lower legs were edematous, with palpable peripheral arterial pulses. Laboratory findings revealed mild microcytic anemia and mildly elevated inflammatory markers. During hospitalization, antibiotic therapy was administered, wounds were regularly dressed with debridement, and the use of silver-containing dressings with mandatory compression therapy was recommended. In addition to the existing chronic therapy, a protein nutritional supplement (Abound®) once daily and iron replacement therapy were introduced. After discharge, the patient was scheduled for more frequent follow-up visits, and the family physician actively coordinated multidisciplinary care involving community nurses, home care services, a vascular surgeon, and a dermatologist. This approach resulted in improved adherence, as the patient gradually developed a better understanding of the chronic nature of her disease and expressed willingness to cooperate. Several months later, she reported significant pain reduction, better symptom control, and improved quality of life.

Discussion: This case highlights the crucial role of patient adherence and consistent application of compression therapy in the management of chronic leg ulcers. Despite appropriately guided medical treatment, non-adherence to recommendations and the use of non-sterile remedies led to recurrent exacerbations and hospitalizations. Improvement was achieved only through intensified communication, education, and the involvement of a multidisciplinary team.

Conclusion: In conclusion, successful management of chronic leg ulcers requires an individualized, multidisciplinary approach with a strong emphasis on patient education and motivation. Regular use of compression therapy, proper local wound care, and good collaboration with the healthcare team are essential for pain reduction, prevention of complications, and improvement of quality of life.

REFERENCES:

1. O'Meara S, Cullum N, Nelson EA, Dumville JC. Compression for venous leg ulcers. Cochrane Database Syst Rev. 2012 Nov 14;11(11):CD000265. doi: 10.1002/14651858.
2. Probst S, Saini C, Bobbink P, Frei A, Dudley-Martin F, Gafner S, Stern F, Gethin G. The Impact of a Multidisciplinary Patient Education Program on Venous Leg Ulcer Healing: A Randomised Controlled Trial. Wound Repair Regen. 2025 Sep-Oct;33(5):e70084. doi: 10.1111/wrr.70084.
3. Basta Juzbašić, A. i sur. Dermatovenerologija. Zagreb: Medicinska naklada;2014. str. 824.
4. Jurić O, Kevrić J. Kronične rane. Zagreb: Naklada Slap; 2019.str. 224.

Debljina kao faktor rizika za razvoj KBB
Prikaz slučaja

Lea Sarić[1], Barbara Šimatić[1]

1. Dom zdravlja Osječko-baranjske županije

Ključne riječi: debljina, kronična bubrežna bolest, faktori rizika
Adresa za dopisivanje: Park kralja Petra Krešimira IV/6, 31000 Osijek
E adresa: sariclea97@gmail.com
ORCID: Lea Sarić: 0009-0000-0974-2404
Barbara Šimatić: 0000-0003-2226-0922

Uvod s ciljem: Debljina je globalno rastući zdravstveni problem i prepoznata je kao važan promjenjivi čimbenik rizika za razvoj kroničnih nezaraznih bolesti, uključujući kroničnu bubrežnu bolest (KBB). Epidemiološke studije pokazale su da osobe s debljinom imaju značajno povećan rizik razvoja KBB u odnosu na normalnu tjelesnu masu, s relativnim rizikom od ~1.8 za nastanak KBB kod osoba s indeksom tjelesne mase (BMI) ≥30 kg/m². Mogući patofiziološki mehanizmi uključuju hemodinamske promjene poput intraglomerularne hiperfiltracije, kroničnu upalu, oksidativni stres i aktivaciju RAAS-a, što može dovesti do oštećenja glomerula i progresivnog pada bubrežne funkcije. Cilj prikaza je ilustrirati utjecaj debljine kao faktora rizika na dugoročni tijek bubrežne bolesti.

Prikaz slučaja: U ambulantu dolazi 46-godišnji muškarac, vozač kamiona, otac dvoje djece. Od 2014. godine prati se zbog bolesti tankih glomerularnih bazalnih membrana, potvrđene biopsijom bubrega. U anamnezi su prisutni i sljedeći komorbiditeti: debljina, arterijska hipertenzija, bronhalna astma, kronična bubrežna bolest stadija G4A3, hiperplazija prostate, nefrolitijaza lijevog bubrega te cista lijevog bubrega. U terapiji pacijent uzima: kalcijev polistirensulfonat po potrebi, torasemid 20 mg jednom dnevno ujutro, natrijev bikarbonat 2x1 tbl, pantoprazol 40 mg, perindoprila/amlodipina 5/10 mg, fenofibrat 160 mg, sevelamer 800 mg uz obroke, bisoprolol 2,5 mg te febuksostat 80 mg. 2018. godine, pacijent se javlja na kontrolni pregled dvije godine nakon posljednjeg praćenja, kada je zaprimljen nalaz biopsije bubrega. U međuvremenu nije redovito kontroliran. Dolazi radi povišenih vrijednosti krvnog tlaka, kreatinina i albuminurije. U tom trenutku bilježi se indeks tjelesne mase od 32,7 kg/m². Preporučena je stroga kontrola arterijskog tlaka, redukcija tjelesne težine uz neslanu i hipokalorijsku prehranu. Sljedeća kontrola provedena je nakon dvije godine, kada se bilježi indeks tjelesne mase od 34,7 kg/m², uz blago pogoršanje bubrežne funkcije i porast proteinurije. U tom razdoblju pacijent je bio slabije suradljiv, s neredovitim dolascima na kontrole, navodeći poslovne obaveze i udaljenost mjesta stanovanja od bolnice. Od 2021. godine pacijent se prati redovito u nefrološkoj ambulanti. Na posljednjoj kontroli u prosincu 2025. godine zabilježen je indeks tjelesne mase od 32 kg/m², uz laboratorijske nalaze: urea 25,0 mmol/L i kreatinin 370 µmol/L, uz relativno stabilan tijek kronične bubrežne bolesti u okviru stadija G4. Krajem siječnja 2026. godine učinjena je konstrukcija arteriovenske fistule zbog očekivane potrebe za nadomjesnim bubrežnim liječenjem.

Rasprava: Ovaj slučaj jasno ilustrira složen međusobni odnos debljine i kronične bubrežne bolesti. Iako je osnovna glomerularna bolest dijagnosticirana relativno rano, dugotrajno održavanje povišene tjelesne mase, uz razdoblja neredovitih kontrola, vjerojatno je pridonijelo bržoj progresiji bubrežnog oštećenja. Debljina se danas smatra neovisnim rizičnim čimbenikom za razvoj i napredovanje kronične bubrežne bolesti, a recentni radovi potvrđuju da smanjenje tjelesne mase može dovesti do smanjenja proteinurije i usporavanja pada glomerularne filtracije.

Zaključak: Ovaj prikaz slučaja naglašava važnost debljine kao značajnog komorbiditeta u bolesnika s kroničnom bubrežnom bolešću. Liječenje debljine treba biti sastavni dio nefrološke skrbi jer se radi o promjenjivom čimbeniku rizika. Rano prepoznavanje, multidisciplinarni pristup i kontinuirano praćenje bolesnika mogu doprinijeti boljoj prognozi i odgodi potrebe za nadomjesnim bubrežnim liječenjem.

LITERATURA:

1. Wang Z, et al. Obesity as a predictive factor for chronic kidney disease in adults: systematic review and meta-analysis. PubMed. 2021; povezuje pretilost s povećanim rizikom od CKD (RR≈1.81).
2. Ghazy F, Ebrahimi N, Ebadinejad A, et al. Association of obesity severity and duration with incidence of chronic kidney disease. BMC Nephrol. 2024;25:320.
3. Obesity and chronic kidney disease. PubMed. 2024; opisuje patofiziološke mehanizme povezane s debljinom i progresijom CKD.
4. Obesity-Related Chronic Kidney Disease: From Diagnosis to Treatment. Diagnostics. 2025;15(2):169; pregled patofiziologije i implikacija pretilosti na bubrege.
5. Obesity Management and Chronic Kidney Disease. PubMed. 2021; opisuje veze između pretilosti, hemodinamskih promjena i glomerularne hiperfiltracije.

Obesity as a Risk Factor for the Development of CKD
Case Report

Lea Sarić[1], Barbara Šimatić[1]

1. Dom zdravlja Osječko-baranjske županije

Key words: obesity, chronic kidney disease, risk factor
Correspondence address: Park kralja Petra Krešimira IV/6, 31000 Osijek
E-mail: sariclea97@gmail.com
ORCID: Lea Sarić: 0009-0000-0974-2404
Barbara Šimatić: 0000-0003-2226-0922

Introduction and aim: Obesity is a globally increasing health problem and is recognized as an important modifiable risk factor for the development of chronic non-communicable diseases, including chronic kidney disease (CKD). Epidemiological studies have shown that individuals with obesity have a significantly increased risk of developing CKD compared with those of normal body weight, with a relative risk of approximately 1.8 for CKD in individuals with a body mass index (BMI) ≥30 kg/m². Possible pathophysiological mechanisms include hemodynamic changes such as intraglomerular hyperfiltration, chronic inflammation, oxidative stress, and activation of the renin–angiotensin–aldosterone system (RAAS), which may lead to glomerular damage and progressive decline in renal function. The aim of this case report is to illustrate the impact of obesity as a risk factor on the long-term course of kidney disease.

Case report: A 46-year-old male, a truck driver and father of two, presented to the outpatient clinic. Since 2014, he has been followed for thin glomerular basement membrane disease, confirmed by kidney biopsy. His medical history includes the following comorbidities: obesity, arterial hypertension, bronchial asthma, chronic kidney disease stage G4A3, prostatic hyperplasia, nephrolithiasis of the left kidney, and a cyst of the left kidney. His current therapy includes: calcium polystyrene sulfonate as needed, torasemide 20 mg once daily in the morning, sodium bicarbonate 2×1 tablet, pantoprazole 40 mg, perindopril/amlodipine 5/10 mg, fenofibrate 160 mg, sevelamer 800 mg with meals, bisoprolol 2.5 mg, and febuxostat 80 mg. In 2018, the patient presented for a follow-up visit two years after his last evaluation, at which time the kidney biopsy results had been obtained. In the interim, he had not attended regular follow-up visits. He presented due to elevated blood pressure, creatinine levels, and albuminuria. At that time, his BMI was 32.7 kg/m². Strict blood pressure control and weight reduction through a low-salt, hypocaloric diet were recommended. The next follow-up was performed two years later, revealing a BMI of 34.7 kg/m², along with mild deterioration of renal function and increased proteinuria. During this period, the patient was poorly adherent, with irregular follow-up visits, citing occupational obligations and the distance between his residence and the hospital. Since 2021, the patient has been followed regularly in the nephrology outpatient clinic. At the most recent visit in December 2025, his BMI was 32 kg/m², with laboratory findings showing urea 25.0 mmol/L and creatinine 370 µmol/L, indicating a relatively stable course of CKD within stage G4. In late January 2026, an arteriovenous fistula was created due to the anticipated need for renal replacement therapy.

Discussion: This case clearly illustrates the complex interplay between obesity and chronic kidney disease. Although the underlying glomerular disease was diagnosed relatively early, the long-term persistence of elevated body weight, combined with periods of irregular follow-up, likely contributed to a more rapid progression of renal damage. Obesity is currently considered an independent risk factor for the development and progression of CKD, and recent studies confirm that weight reduction may lead to decreased proteinuria and a slower decline in glomerular filtration rate.

Conclusion: This case report highlights the importance of obesity as a significant comorbidity in patients with chronic kidney disease. The management of obesity should be an integral part of nephrological care, as it represents a modifiable risk factor. Early recognition, a multidisciplinary approach, and continuous patient follow-up may contribute to improved prognosis and delay the need for renal replacement therapy.

REFERENCES:

1. Wang Z, et al. Obesity as a predictive factor for chronic kidney disease in adults: systematic review and meta-analysis. PubMed. 2021; povezuje pretilost s povećanim rizikom od CKD (RR≈1.81).
2. Ghazy F, Ebrahimi N, Ebadinejad A, et al. Association of obesity severity and duration with incidence of chronic kidney disease. BMC Nephrol. 2024;25:320.
3. Obesity and chronic kidney disease. PubMed. 2024; opisuje patofiziološke mehanizme povezane s debljinom i progresijom CKD.
4. Obesity-Related Chronic Kidney Disease: From Diagnosis to Treatment. Diagnostics. 2025;15(2):169; pregled patofiziologije i implikacija pretilosti na bubrege.
5. Obesity Management and Chronic Kidney Disease. PubMed. 2021; opisuje veze između pretilosti, hemodinamskih promjena i glomerularne hiperfiltracije.

Kronični sinusitis kao manifestacija metaboličkog sindroma

Loren Serdarević[1], Romyna Zimak[2], Marija Petrovčić[1]

1. Specijalistička ordinacija obiteljske medicine Marija Petrovčić, dr.med, spec. obiteljske medicine, Zagreb
2. Dom zdravlja Zagreb - Zapad, Zagreb

Ključne riječi: lipodistrofija, metabolički sindrom, rinosinuitis
Adresa za dopisivanje: Albaharijeva 4, 10000 Zagreb
E adresa: lijecnik.marija.petrovcic@gmail.com
ORCID: Loren Serdarević: 0000-0002-8806-2382
Romyna Zimak: 0000-0003-3836-3352
Marija Petrovčić: 0000-0002-5090-4425

Uvod s ciljem: Kronični rinosinuitis (KRS) je upala paranazalnih sinusa koja se manifestira bolovima u području sinusa, hiposmijom ili anosmijom, sekrecijom iz nosa te otežanim disanjem na nos, trajanja minimalno 12 tjedana (1). Metabolički sindrom podrazumijeva pojavu barem tri od sljedećih simptoma: abdominalne pretilosti, inzulinske rezistencije, hipertenzije i dislipidemije (2). Metabolički sindrom se sve više prepoznaje kao stanje kronične upale niskog stupnja, pri čemu se KRS s većom učestalošću javlja u pacijenata s metaboličkim sindromom (3). Prikazujemo slučaj pacijentice s terapijski rezistentnim KRS i prisutnim elementima metaboličkog sindroma, s ciljem ukazivanja na moguću povezanost metaboličkog sindroma i KRS.

Prikaz slučaja: 57-godišnja pacijentica se javlja zbog simptoma KRS koji traju unazad godinu dana. Navodi postnazalnu sekreciju, suhi kašalj, otežano disanje na nos, anosmiju te glavobolje. U osobnoj anamnezi posljednje dvije godine prisutni numularni areali na nogama koji perzistiraju unatoč terapiji topikalnim kortikosteroidima i peroralnim antihistaminicima. Učinjenom biopsijom i patohistološkom analizom opisuju se elementi granuloma annulare. Pacijentica navodi učestale epizode sinusitisa tijekom nekoliko godina. U anamnezi je i blefaroplastika zbog izraženog nakupljanja masnog tkiva u palpebrama. U laboratorijskim nalazima se unazad 10 godina prati hiperlipidemija. Pacijentici je ranije predloženu terapiju statinima samoinicijativno prekinula. U najnovijim laboratorijskim nalazima bilježe se povišene vrijednosti ukupnog i LDL kolesterola, glukoze, HBA1c i transaminaza, te uredne razine ukupnog IgE. U obiteljskoj anamnezi Sjogrenov sindrom, dijabetes, hiperlipidemija i preboljeli infarkt miokarda. Pacijentica je nepušač, urednog apetita, alkohol konzumira povremeno. Ne uzima kroničnu terapiju. Na pregledu ždrijelo je hiperemično, bez vidljive postnazalne sekrecije, u nosu vidljiva žuta sekrecija. Limfni čvorovi vrata nisu palpabilni. Vrijednost krvnog tlaka je 130/90 mmHg, indeks tjelesne mase 27. Pacijentica ispire nos fiziološkom otopinom, uvodi se intranazalni kortikosteroid tijekom tri mjeseca. Postavi se dijagnoza KRS te započinjemo terapiju amoksicilinom i klavulanskom kiselinom 14 dana. Na terapiju nije bilo kliničkog poboljšanja te se mijenja u klindamicin u dozi od 600 mg tijekom 16 dana (4). Nekoliko mjeseci kasnije pacijentica se javlja s perzistencijom simptoma. Upućena je na otorinolaringologiju. Učinjenom endoskopskom pretragom vizualizirana je devijacija nazalnog septuma, bez drugog patološkog nalaza, što je naknadno potvrđeno i CT-om paranazalnih sinusa, koju specijalist ne smatra kliničkim značajnom, bez indikacije za kirurškim liječenjem. U nalazu se opisuje i hiperpneumatizacija sfenoidnog sinusa. Predložena je dijeta i uveden metformin u dozi od 500 mg jednom dnevno i atorvastatin 20 mg. Mjesec dana nakon uvođenja terapija pacijentica navodi subjektivno poboljšanje, planiraju se daljnje kontrole metaboličkog sindroma.

Rasprava: Cilj je povezati granuloma annulare, metabolički sindrom, KRS i hiperpneumatizaciju sfenoidnog sinusa. Granuloma annulare se povezuje s dijabetesom, bolestima štitnjače, hiperlipidemijom i infekcijama (5). Prema istraživanjima, dokazano je da kod pacijenata metaboličkim sindromom i KRS postoji rizik povećan recidiva nakon operacije sinusa, koji se povećava sa povećanjem broja komponenti metaboličkog sindroma (6). U literaturi nismo našli povezanost hiperpneumatizacije sfenoidalnog sinusa i KRS, ali se povezuje s nasljednim lipidnim distrofijama u kojima je prisutna hiperlipidemija, inzulinska rezistencija te diabetes mellitus. To nas je nagnalo da istražimo povezanost KRS s generaliziranom upalom u sklopu metaboličkog sindroma (7).

Zaključak: Metabolički sindrom treba gledati kao generalizirani upalni proces te na njega misliti i kod KRS te liječiti i njega kao podležeći uzrok.

LITERATURA:

1. Sedaghat AR. Chronic Rhinosinusitis. Am Fam Physician. 2017 Oct 15;96(8):500-506.
2. Swarup S, Ahmed I, Grigorova Y, Zeltser R. Metabolic Syndrome. 2024 Mar 7. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 Jan–.
3. Lee EJ, Hwang HJ, Jung CM, Kim MK, Kang MS, Kim KS. The relationship between chronic rhinosinusitis and metabolic syndrome. Am J Rhinol Allergy. 2017 Jul 1;31(4):222-227. doi: 10.2500/ajra.2017.31.4445.
4. Fried MP. HeMED – Sinuitis [Internet]. HeMED.hr. [citirano 23. siječnja 2026]. Dostupno na: https://hemed.hr/Default.aspx?sid=12551
5. Barbieri JS, Rosenbach M, Rodriguez O, Margolis DJ. Association of Granuloma Annulare With Type 2 Diabetes, Hyperlipidemia, Autoimmune Disorders, and Hematologic Malignant Neoplasms. JAMA Dermatol. 2021 Jul 1;157(7):817-823. doi: 10.1001/jamadermatol.2021.1805.

Chronic Rhinosinusitis as a Manifestation of Metabolic Syndrome

Loren Serdarević[1], Romyna Zimak[2], Marija Petrovčić[1]

1. Private family practice Marija Petrovčić, MD, family medicine specialist, Zagreb
2. Health Center Zagreb - West

Key words: Lypodystrophy, Metabolic Syndrome, Rhinosinusitis
Correspondence address: lbaharijeva 4, 10000 Zagreb
E-mail: lijecnik.marija.petrovcic@gmail.com
ORCID: Loren Serdarević: 0000-0002-8806-2382
Romyna Zimak: 0000-0003-3836-3352
Marija Petrovčić: 0000-0002-5090-4425

Introduction with aim: Chronic rhinosinusitis (CRS) is an inflammation of the paranasal sinuses that manifests in sinus pain, hyposmia or anosmia, nasal discharge, and difficulty breathing through the nose, lasting over 12 weeks (1). Metabolic syndrome involves the presence of at least three of the following symptoms: abdominal obesity, insulin resistance, hypertension, and dyslipidemia (2). Metabolic syndrome is increasingly recognized as a condition of chronic low-grade inflammation, with CRS occurring more frequently in patients with metabolic syndrome (3). We present a case of a patient with treatment-resistant CRS and elements of metabolic syndrome. Our aim is to explore the possible association between metabolic syndrome and CRS.

Case report: A 57-year-old female patient presents with symptoms of CRS, persisting for the past year. She reports postnasal drip, dry cough, difficulty breathing through the nose, anosmia, and headaches. Her personal history includes nummular areas on her legs for the past two years that persist despite treatment with topical corticosteroids and oral antihistamines. A biopsy and pathohistological analysis describe elements of granuloma annulare. The patient reports frequent episodes of sinusitis over the past several years. Her history also includes blepharoplasty due to significant accumulation of fatty tissue in the eyelids. Laboratory findings have been consistent with hyperlipidemia for the past 10 years. The patient stopped using the previously recommended statin therapy. The most recent laboratory findings show elevated values of total and LDL cholesterol, glucose, HBA1c, and transaminases, and normal levels of total IgE. Family history includes Sjogren's syndrome, diabetes, hyperlipidemia, and previous myocardial infarction. The patient is a non-smoker, has a normal appetite, and consumes alcohol occasionally. She is not taking any chronic therapy. On examination, the pharynx is hyperemic, with no visible postnasal secretion, and yellow secretion is visible in the nose. The cervical lymph nodes are not palpable. Blood pressure is 130/90 mmHg, body mass index is 27. The patient rinses her nose with saline, and we ordinated therapy with an intranasal corticosteroid over three months. A diagnosis of CRS is made and therapy with amoxicillin and clavulanic acid is initiated for 14 days. There was no clinical improvement, and the therapy was continued with clindamycin at a dose of 600 mg for 16 days (4). Several months later, the patient presented with symptoms still persisting. She was referred to an otolaryngologist. An endoscopic examination visualized a deviated nasal septum, without any other pathological findings, which was subsequently confirmed with a CT scan of the paranasal sinuses, which the specialist did not consider clinically significant, and with no indication for surgical treatment. The CT scan also showed hyperpneumatization of the sphenoid sinus. A diet was suggested, and metformin was introduced at a dose of 500 mg once a day and atorvastatin at 20 mg once a day. One month after the introduction of therapy, the patient reported subjective improvement, and further controls of the metabolic syndrome are planned.

Discussion: The aim is to link granuloma annulare, metabolic syndrome, CRS, and sphenoid sinus hyperpneumatization. Granuloma annulare is associated with diabetes, thyroid disease, hyperlipidemia, and infections (5). According to research, it has been proven that patients with metabolic syndrome and CRS have an increased risk of recurrence after sinus surgery, which further increases with the number of components of metabolic syndrome present (6). We did not find an association between sphenoid sinus hyperpneumatization and CRS in the literature, but it is associated with hereditary lipid dystrophies in which hyperlipidemia, insulin resistance, and diabetes mellitus are present. This prompted us to investigate the association of CRS with metabolic syndrome (7).

Conclusion: Metabolic syndrome should be viewed as a generalized inflammatory process and should be considered in CRS and treated as an underlying cause.

REFERENCES:

1. Sedaghat AR. Chronic Rhinosinusitis. Am Fam Physician. 2017 Oct 15;96(8):500-506.
2. Swarup S, Ahmed I, Grigorova Y, Zeltser R. Metabolic Syndrome. 2024 Mar 7. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 Jan–.
3. Lee EJ, Hwang HJ, Jung CM, Kim MK, Kang MS, Kim KS. The relationship between chronic rhinosinusitis and metabolic syndrome. Am J Rhinol Allergy. 2017 Jul 1;31(4):222-227. doi: 10.2500/ajra.2017.31.4445.
4. Fried MP. HeMED – Sinuitis [Internet]. HeMED.hr. [citirano 23. siječnja 2026]. Dostupno na: https://hemed.hr/Default.aspx?sid=12551
5. Barbieri JS, Rosenbach M, Rodriguez O, Margolis DJ. Association of Granuloma Annulare With Type 2 Diabetes, Hyperlipidemia, Autoimmune Disorders, and Hematologic Malignant Neoplasms. JAMA Dermatol. 2021 Jul 1;157(7):817-823. doi: 10.1001/jamadermatol.2021.1805.

Kako pametni uređaji mogu dovesti do dijagnoze fibrilacije atrija – prikaz slučaja

Filip Šarčević[1], Roberto Bajto[1], Barbara Strišković Šarčević[1]

1. Dom zdravlja Osječko-baranjske županije

Ključne riječi: fibrilacija atrija, obiteljska medicina, pametni uređaji, umjetna inteligencija
Adresa za dopisivanje: Filip Šarčević, Augusta Šenoe 56A, 31550 Valpovo
E adresa: filip.sarcevic@gmail.com
ORCID: Filip Šarčević: 0000-0002-8765-4036
Roberto Bajto: 0009-0001-5199-1890
Barbara Strišković Šarčević: 0009-0004-5265-5161

Uvod s ciljem: Fibrilacija atrija je najčešća supraventrikularna aritmija koja se očituje neorganiziranom električnom aktivnošću atrija što dovodi do gubitka učinkovite atrijske kontrakcije i nepravilnog, često ubrzanog, ventrikularnog odgovora. Povezana je s hemodinamskom nestabilnošću, smanjenim minutnim volumenom te povećanim rizikom od tromboembolijskih događaja. Cilj prikaza je prikazati dijagnostički i terapijski pristup novootkrivenoj permanentnoj fibrilaciji atrija te istaknuti ulogu novih tehnologija u ranom otkrivanju poremećaja srčanog ritma.

Prikaz slučaja: U ordinaciju se javio 59-godišnji muškarac jer mu je prilikom mjerenja krvnog tlaka tlakomjer signalizirao nepravilan rad srca. Pacijent je bio asimptomatski i hemodinamski stabilan. U fizikalnom statusu je bila prisutna tahiaritmična akcija srca te je napravljen 12-kanalni elektrokardiogram kojim je potvrđena fibrilacija atrija s brzim ventrikularnim odgovorom. Ambulantno je ordiniran bisoprolol 2,5 mg radi kontrole ritma. Prema skali Europskog udruženja za srčani ritam (EHRA) pacijent spada u stupanj EHRA 1 jer je bez ikakvih simptoma, a procijenjen je visoki kardiovaskularni rizik prema SCORE-2 tablici te je nužno liječenje čimbenika rizika što se ostvaruje liječenjem arterijske hipertenzije i hiperlipidemije. Nije bilo potrebe za hospitalizacijom jer je pacijent bio kardiovaskularno stabilan. Procijenjen je rizik od tromboembolije korištenjem sustava za procjenu rizika moždanog udara u bolesnika s fibrilacijom atrija (CHA2DS2-VASc) koji je iznosio 1 te procjena jednogodišnjeg rizika jakog krvarenja u ljudi koji uzimaju antikoagulanse zbog fibrilacije atrija (HAS-BLED) koji je iznosio 0 te je postojala indikacija za uvođenje antikoagulantne terapije. Nakon kardiološke konzultacije u terapiju je uveden direktni oralni antikoagulantni lijek (DOAK) edoksaban 60 mg uz prethodno uvedeni bisoprolol 2,5 mg. U daljnjoj obradi je indiciran Holter EKG, ergometrija i ultrazvuk srca.

Rasprava: Fibrilacija atrija je najčešća aritmija s kojom se susreću liječnici obiteljske medicine. Pacijenti se mogu prezentirati s različitom kliničkom slikom od asimptomatskih do simptomatskih sa palpitacijama, umorom, nedostatkom zraka, bolovima u prsima, gubitkom svijesti i drugih te se prema izraženosti simptoma pacijenti svrstavaju prema EHRA skali. Napredak tehnologije doveo je do ranijeg prepoznavanja asimptomatskih pacijenata kojima nepravilan rad srca mogu signalizirati uređaji poput pametnih satova, narukvica, prstenova ili tlakomjera. Kod pacijenata treba procijeniti potrebu za hitnom hospitalizacijom koja je indicirana kada postoji sumnja na ishemičnu bolest srca te ako su prisutni znakovi kardijalne dekompenzacije, hipotenzije, hipoperfuzije ili šoka te ne postoji mogućnost kontrole ritma. Potrebno je procijenti rizik od tromboembolije pomoću CHA2DS2-VASc rezultata i rizik od krvarenja kod pacijenata na antikoagulantnoj terapiji pomoću HAS-BLED rezultata. U terapiji prednost sve više imaju direktni oralni antikoagulansi ispred inhibitora vitamina K varfarina. Digitalne tehnologije cjelokupno poboljšavaju kardiovaskularno zdravlje pacijenata. Dokazano je da su pacijenti koji nose pametne satove više fizički aktivni, a uz primjenu drugih digitalnih tehnologija bolje prate podatke o svojem zdravlju. Napretkom će se takvi podatci moći izravno dijeliti s liječnikom, a već sada postoje algoritmi umjetne inteligencije koji na temelju EKG-a, vitalnih znakova i simptoma mogu prepoznati pacijenta u visokom riziku od akutnog koronarnog sindroma.

Zaključak: U obiteljskoj medicini nužno je poznavanje dijagnostičkog i terapijskog pristupa pacijentu s fibrilacijom atrija. Nove tehnologije olakšavaju prepoznavanje asimptomatskih bolesnika te omogućuju raniju dijagnostiku i početak liječenja čime se smanjuje rizik od komplikacija.

LITERATURA:

1. Van Gelder IC, Rienstra M, Bunting KV, Casado-Arroyo R, Caso V, Crijns HJGM I sur. 2024 ESC Guidelines for the management of atrial fibrillation developed in collaboration with the European Association for Cardio-Thoracic Surgery (EACTS). Eur Heart J. 2024;45(36):3314-414.
2. Karuza J, Ružić A. Atrijska fibrilacija. U: Diminić Lisica I, Katić M, Bergman Marković B i sur. Izazovi u praksi obiteljskog liječnika. 1. Izdanje. Zagreb: Medicinska naklada; 2022. str. 276-89.
3. Gabrić ID. Digitalno praćenje zdravlja u kardiologiji. Medicus [Internet]. 2025 [pristupljeno 25.01.2026.];34.(1. KRM zdravlje):125-130. Dostupno na: https://hrcak.srce.hr/338541
4. Gabrić ID. Kako pratiti svoju tjelesnu aktivnost. Medicus [Internet]. 2019 [pristupljeno 25.01.2026.];28(2 Tjelesna aktivnost):181-187. Dostupno na: https://hrcak.srce.hr/227113
5. World Health Organization. Global strategy on digital health 2020-2025. Geneva: World Health Organization; 2021.

How smart devices can lead to the diagnosis of atrial fibrillation – case report

Filip Šarčević[1], Roberto Bajto[1], Barbara Strišković Šarčević[1]

1. Health Center of Osijek-Baranja County

Key words: atrial fibrillation, family medicine, smart devices, artificial intelligence
Correspondence address: Filip Šarčević, Augusta Šenoe 56A, 31550 Valpovo
E-mail: filip.sarcevic@gmail.com
ORCID: Filip Šarčević: 0000-0002-8765-4036
Roberto Bajto: 0009-0001-5199-1890
Barbara Strišković Šarčević: 0009-0004-5265-5161

Introduction with aim: Atrial fibrillation is the most common supraventricular arrhythmia, characterized by disorganized atrial electrical activity leading to loss of effective atrial contraction and an irregular, often rapid, ventricular response. It is associated with hemodynamic instability, reduced cardiac output, and an increased risk of thromboembolic events. The aim of this case report is to present the diagnostic and therapeutic approach to newly diagnosed permanent atrial fibrillation and to highlight the role of new technologies in the early detection of cardiac rhythm disorders.

Case report: A 59-year-old man presented to a family medicine office after his home blood pressure monitor detected an irregular heart rhythm during routine measurement. The patient was asymptomatic and hemodynamically stable. Physical examination revealed a tachyarrhythmic heart action, and a 12-lead electrocardiogram confirmed atrial fibrillation with a rapid ventricular response. Bisoprolol 2.5 mg was prescribed in the outpatient setting for rate control. According to the European Heart Rhythm Association (EHRA) classification, the patient was classified as EHRA class I due to the absence of symptoms. Cardiovascular risk was assessed as high using the SCORE2 system, indicating the need for risk factor management through treatment of arterial hypertension and hyperlipidemia. Hospitalization was not required due to cardiovascular stability. Thromboembolic risk was assessed using the CHA_2DS_2-VASc score (score 1), and bleeding risk was evaluated using the HAS-BLED score (score 0), indicating the need for anticoagulant therapy. Following cardiology consultation, a direct oral anticoagulant (DOAC), edoxaban 60 mg, was introduced alongside ongoing bisoprolol therapy. Further diagnostic evaluation included Holter ECG monitoring, exercise stress testing, and transthoracic echocardiography.

Discussion: Atrial fibrillation is the most common arrhythmia encountered in family medicine practice. Patients may present with a wide range of clinical manifestations, from asymptomatic cases to symptomatic presentations including palpitations, fatigue, dyspnea, chest pain, syncope, and others. Symptom severity is classified using the EHRA scale. Advances in technology have enabled earlier identification of asymptomatic patients, as irregular heart rhythm can be detected by devices such as smartwatches, fitness bands, smart rings, or blood pressure monitors. The need for urgent hospitalization should be assessed, particularly in cases of suspected ischemic heart disease or when signs of cardiac decompensation, hypotension, hypoperfusion, or shock are present and rhythm control cannot be achieved. Thromboembolic risk should be evaluated using the CHA_2DS_2-VASc score, and bleeding risk should be assessed using the HAS-BLED score in patients receiving anticoagulant therapy. Direct oral anticoagulants are increasingly preferred over vitamin K antagonists such as warfarin. Digital technologies overall contribute to improved cardiovascular health, as patients using smart devices tend to be more physically active and better engaged in monitoring their health data. With further technological advancements, such data will be able to be directly shared with physicians, and artificial intelligence algorithms already exist that can identify patients at high risk of acute coronary syndrome based on ECG data, vital signs, and reported symptoms.

Conclusion: In family medicine, it is essential to be familiar with the diagnostic and therapeutic approach to patients with atrial fibrillation. New technologies facilitate the identification of asymptomatic patients and enable earlier diagnosis and initiation of treatment, thereby reducing the risk of complications.

REFERENCES:

1. Van Gelder IC, Rienstra M, Bunting KV, Casado-Arroyo R, Caso V, Crijns HJGM I sur. 2024 ESC Guidelines for the management of atrial fibrillation developed in collaboration with the European Association for Cardio-Thoracic Surgery (EACTS). Eur Heart J. 2024;45(36):3314-414.
2. Karuza J, Ružić A. Atrijska fibrilacija. U: Diminić Lisica I, Katić M, Bergman Marković B i sur. Izazovi u praksi obiteljskog liječnika. 1. Izdanje. Zagreb: Medicinska naklada; 2022. str. 276-89.
3. Gabrić ID. Digitalno praćenje zdravlja u kardiologiji. Medicus [Internet]. 2025 [pristupljeno 25.01.2026.];34.(1. KRM zdravlje):125-130. Dostupno na: https://hrcak.srce.hr/338541
4. Gabrić ID. Kako pratiti svoju tjelesnu aktivnost. Medicus [Internet]. 2019 [pristupljeno 25.01.2026.];28(2 Tjelesna aktivnost):181-187. Dostupno na: https://hrcak.srce.hr/227113
5. World Health Organization. Global strategy on digital health 2020-2025. Geneva: World Health Organization; 2021.

Mitralna regurgitacija u post-COVID eri: stari znanac u novom ruhu - Prikaz slučaja

Andrea Štefić[1], Ana Kilvain[1], Jadranka Karuza[2]

1. Dom zdravlja Primorsko goranske županije
2. Specijalistička ordinacija obiteljske medicine, Jadranka Karuza

Ključne riječi: post COVID-19 sindrom, grudna bol, srčani šum, prolaps mitralne valvule, mitralna insuficijencija
Adresa za dopisivanje: Andrea Štefić, Antuna Barca 20, 51000 Rijeka
E adresa: andrea.stefic@domzdravlja-pgz.hr
ORCID: Andrea Štefić: 0009-0005-6366-6293
Ana Kilvain: 0000-0002-9037-7500
Jadranka Karuza: 0000-0002-8374-2864

Uvod s ciljem. Grudna bol nakon preboljele COVID-19 infekcije često usmjerava kliničko razmišljanje prema postvirusnim komplikacijama poput miokarditisa ili plućne embolije. Međutim, novootkriveni srčani šum predstavlja važan klinički znak koji zahtijeva dodatnu obradu neovisno o epidemiološkom kontekstu. Cilj ovog prikaza slučaja je istaknuti važnost fizikalnog pregleda kod bolesnika s post-COVID simptomima te prikazati kako pravovremeno prepoznavanje novog srčanog šuma može dovesti do dijagnoze klinički značajne valvularne bolesti.

Prikaz slučaja. Pedesetogodišnja pacijentica javila se u ambulantu zbog osjećaja pritiska u prsima započetog istog jutra koji je bio prisutan i na pregledu. Bol nije bila vezana uz napor i nije se širila. Deset dana ranije bila je pozitivna na SARS-CoV-2, uz suhi kašalj, bez dispneje. Prilikom pregleda bila je dobrog općeg stanja, eupnoična, urednih vitalnih parametara. Potkoljenice su bile bez edema. Nad plućima je bio čujan uredan šum disanja, a auskultacijom srca uočila se ritmična srčana akcija, jasni tonovi, ali i novonastali sistolički šum s punctum maximum nad iktusom. EKG je pokazao sinusni ritam bez znakova akutnog zbivanja. Pacijentica je kardiološki obrađena prije dvije godine zbog ventrikularne ekstrasistolije, uz uredan nalaz ultrazvuka srca. Zbog pritiska u prsima, novootkrivenog šuma i recentne COVID-19 infekcije upućena je na hitnu bolničku obradu. Laboratorijski nalazi, uključujući troponin, NT-proBNP i D-dimer, bili su uredni, kao i RTG grudnih organa. Konzilijarno je pregledana od strane kardiologa koji je potvrdio prisutnost sistoličkog šuma intenziteta 5/6. Nakon mjesec dana transtorakalnim i transezofagealnim ultrazvukom verificirani su prolaps stražnjeg mitralnog kuspisa i rupturirana korda te posljedično teška mitralna regurgitacija. Lijeva klijetka i lijeva pretklijetka su već bile uvećane, ali uz još očuvanu sistoličku funkciju lijeve klijetke. Bolesnica je 5 mjeseci nakon postavljanja dijagnoze podvrgnuta kirurškoj rekonstrukciji mitralne valvule s implantacijom neokorde i mitralnog prstena, uz dobar postoperativni ishod.

Rasprava. Grudna bol nakon preboljele COVID-19 infekcije predstavlja dijagnostički izazov u ambulanti obiteljske medicine. U ovom slučaju, novootkriveni srčani šum bio je ključan klinički nalaz koji je doveo do pravodobne ehokardiografske obrade i dijagnoze teške mitralne regurgitacije uzrokovane rupturom korde i prolapsom stražnjeg kuspisa. U dostupnoj literaturi opisani su rijetki, ali klinički značajni slučajevi akutne ili novonastale teške mitralne regurgitacije u vremenskoj povezanosti s COVID-19 infekcijom ili razdobljem oporavka. Objavljeni prikazi slučajeva navode rupturu korda, izraženi prolaps mitralne valvule i pogoršanje prethodno subkliničke valvularne bolesti, ponekad u sklopu COVID-19 povezanog miokarditisa. Etiologija ovakvih nalaza nije u potpunosti razjašnjena, no u literaturi se navodi moguća uloga angiotenzin-konvertirajući enzim 2 (ACE2) receptora, koji su prisutni u miokardu i valvularnom aparatu, kao ulazne točke za SARS-CoV-2. Izravno virusno oštećenje, u kombinaciji sa sistemskom upalnom reakcijom i potencijalnom citokinskom olujom, može izazvati upalu srčanog tkiva i fibrozu, što dovodi do promjena u srčanim strukturama i valvularnom aparatu. Međutim, trenutačni dokazi nisu dostatni za potvrdu izravne uzročne povezanosti.

Zaključak. Prikazani slučaj naglašava važnost temeljitog kliničkog pregleda u obiteljskoj medicini. U bolesnika s grudnom boli nakon COVID infekcije, auskultacija srca može biti ključan dio fizikalnog pregleda koji usmjerava daljnju dijagnostičku obradu i vodi do točne dijagnoze. Novootkriveni srčani šum uvijek zahtijeva ehokardiografsku evaluaciju, osobito u kontekstu novih simptoma. Pravovremeno prepoznavanje od strane obiteljskog liječnika omogućuje rano upućivanje, optimalno liječenje i povoljan ishod za bolesnika.

LITERATURA:

1. Khanduri A, Anand U, Doss M, Lovett L. Severe acute mitral valve regurgitation in a COVID-19-infected patient. BMJ Case Reports CP [Internet]. 2021 Jan 1;14(1):e239782.
2. Bayly B, Hasan F, Makam S. New onset of severe mitral valve regurgitation status post COVID-19 recovery. Consultant. 2023;63(9):e4
3. Alsagaff MY, Shonafi KA, Handari SD, Sembiring YE, Lusida TTE, Nugraha RA. An unexpected overlap syndrome of mitral valve prolapse with COVID-19 related myocarditis: case report from two patients. Ann Med Surg (Lond). 2023 Apr 3;85(4):1276-1281.
4. Silva JLR de O, Lima MCO, Fachin LP, Almeida LF de, Costa SCL, Morais MSF de, i ostali. Acute mitral insufficiency due to chord rupture in a COVID-19 patient: Case report. Brazilian Journal of Development. 2023.;9(2):p. 6342–6350

Mitral regurgitation in the post-COVID era: A familiar entity in a new clinical context

Andrea Štefić[1], Ana Kilvain[1], Jadranka Karuza[2]

1. Dom zdravlja Primorsko goranske županije
2. Specijalistička ordinacija obiteljske medicine, Jadranka Karuza

Key words: Post-acute COVID-19 Syndrome, chest pain, heart murmur, mitral valve prolapse, mitral valve insufficiency
Correspondence address: Andrea Štefić, Antuna Barca 20, 51000 Rijeka
E-mail: andrea.stefic@domzdravlja-pgz.hr
ORCID: Andrea Štefić: 0009-0005-6366-6293
Ana Kilvain: 0000-0002-9037-7500
Jadranka Karuza: 0000-0002-8374-2864

Introduction with Aim. Chest pain following COVID-19 infection often directs clinical reasoning toward post-viral complications such as myocarditis or pulmonary embolism. However, the detection of a newly developed cardiac murmur represents an important clinical sign that requires further diagnostic evaluation regardless of the epidemiological context. The aim of this case report is to highlight the importance of physical examination in patients presenting with post-COVID symptoms and to demonstrate how timely recognition of a new cardiac murmur can lead to the diagnosis of clinically significant valvular heart disease.

Case Presentation. A 50-year-old woman presented to her primary care physician with a sensation of chest pressure that had started earlier that morning and was still present at the time of examination. The pain was non-exertional and non-radiating. Ten days prior, she had tested positive for SARS-CoV-2 and reported a dry cough without dyspnoea. On examination, she was in good general condition, eupnoeic, with normal vital signs. There was no peripheral oedema. Lung auscultation revealed normal breath sounds. Cardiac auscultation demonstrated a regular rhythm with normal heart sounds and a newly detected systolic murmur with punctum maximum at the cardiac apex. Electrocardiography showed sinus rhythm without signs of acute pathology. Two years earlier, the patient had undergone cardiological evaluation for ventricular extrasystoles, including transthoracic echocardiography, which was unremarkable. Given the chest pressure, newly detected murmur, and recent COVID-19 infection, the patient was referred for urgent hospital evaluation. Laboratory tests, including cardiac troponin, NT-proBNP, and D-dimer, were within normal limits, as was chest radiography. A cardiology consultation confirmed a systolic murmur graded 5/6. One month later, transthoracic and transoesophageal echocardiography revealed prolapse of the posterior mitral leaflet with chordal rupture, resulting in severe mitral regurgitation. The left ventricle and left atrium were already dilated, although left ventricular systolic function remained preserved. Five months after diagnosis, the patient underwent surgical mitral valve repair with implantation of neochordae and a mitral annuloplasty ring, with a favourable postoperative outcome.

Discussion. Chest pain following COVID-19 infection represents a diagnostic challenge in primary care. In this case, the newly detected cardiac murmur was the key clinical finding that prompted timely echocardiographic evaluation and led to the diagnosis of severe mitral regurgitation caused by chordal rupture and posterior leaflet prolapse. The available literature describes rare but clinically significant cases of acute or newly developed severe mitral regurgitation temporally associated with COVID-19 infection or the recovery period. Published case reports describe chordal rupture, marked mitral valve prolapse, and deterioration of previously subclinical valvular disease, sometimes in the context of COVID-19–associated myocarditis. The underlying aetiology remains incompletely understood. A potential role of angiotensin-converting enzyme 2 (ACE2) receptors, which are expressed in the myocardium and valvular tissue and serve as an entry point for SARS-CoV-2, has been suggested. Direct viral injury combined with systemic inflammation and cytokine-mediated effects may induce myocardial and valvular inflammation and fibrosis, leading to structural changes. However, current evidence is insufficient to establish a direct causal relationship.

Conclusion. This case underscores the importance of thorough clinical examination in family medicine. In patients presenting with chest pain or pressure after COVID-19 infection, cardiac auscultation may represent a crucial component of physical examination that guides further diagnostic work-up and leads to an accurate diagnosis. A newly detected cardiac murmur always warrants echocardiographic evaluation, particularly in the presence of new symptoms. Timely recognition by the family physician enables early referral, optimal treatment, and a favourable patient outcome.

REFERENCES:

1. Khanduri A, Anand U, Doss M, Lovett L. Severe acute mitral valve regurgitation in a COVID-19-infected patient. BMJ Case Reports CP [Internet]. 2021 Jan 1;14(1):e239782.
2. Bayly B, Hasan F, Makam S. New onset of severe mitral valve regurgitation status post COVID-19 recovery. Consultant. 2023;63(9):e4
3. Alsagaff MY, Shonafi KA, Handari SD, Sembiring YE, Lusida TTE, Nugraha RA. An unexpected overlap syndrome of mitral valve prolapse with COVID-19 related myocarditis: case report from two patients. Ann Med Surg (Lond). 2023 Apr 3;85(4):1276-1281.
4. Silva JLR de O, Lima MCO, Fachin LP, Almeida LF de, Costa SCL, Morais MSF de, i ostali. Acute mitral insufficiency due to chord rupture in a COVID-19 patient: Case report. Brazilian Journal of Development. 2023.;9(2):p. 6342–6350

Nepovoljna iskustva u djetinjstvu – uloga liječnika obiteljske medicine

Ema Alfirević[1], Lovorka Kovačec[1], Jelena Ević[2]

1. Dom zdravlja Zagreb – Centar
2. Specijalistička ordinacija obiteljske medicine, dr.sc. Jelena Ević, dr. med. spec. obiteljske medicine

Ključne riječi: Nepovoljna iskustva u djetinjstvu (NID), obiteljska medicina, ovisnost o alkoholu, mentalno zdravlje djece, disfunkcionalna obitelj
E adresa: kovacevicema@gmail.com
ORCID: Ema Alfirević: 0000-0001-8455-602X
Lovorka Kovačec: 0009-0006-9603-728X
Jelena Ević: 0009-0004-8116-9787

Uvod s ciljem: Pojam nepovoljnih iskustava u djetinjstvu (NID) obuhvaća različite vrste zlostavljanja i zanemarivanja, kao i aspekte djetetove životne okoline koji mogu izazvati traumu ili kronični stres u prvih 18 godina života. Prisutnost jednog ili više NID značajno povisuje rizik za pojavu depresije, ovisnosti i drugih kroničnih bolesti te skraćuje očekivano trajanje životnog vijeka. Cilj ovog rada je prikazati ulogu liječnika obiteljske medicine (LOM) u skrbi za dvoje maloljetne djece koje odrastaju u disfunkcionalnoj obitelji s majkom ovisnom o alkoholu te utjecaju na njihovo zdravlje.

Prikaz slučaja: U skrbi LOM-a bila je četveročlana obitelj koju čine majka, otac te dvije kćeri u dobi od 13 i 11 godina. U ambulantu su djevojčice redovito dolazile u pratnji oca. Njihovi razlozi dolaska u početku su bile uglavnom nespecifične somatske tegobe poput glavobolje i boli u trbuhu, s vremenom se pojavila pojačana potreba za psihološkom i emocionalnom potporom, a od nedavno i psihijatrijskim liječenjem. Majka djevojčica otprije se borila s ovisnošću o alkoholu, a unatoč liječenju u psihijatrijskoj ustanovi, nije prestala s njegovom povremenom konzumacijom. Majka nije bila svjesna svojeg problema ovisnosti o alkoholu i težine svojeg stanja, a po navodima obitelji, pod utjecajem alkohola često je bila verbalno agresivna. S LOM je komunicirala uglavnom telefonski te je odbijala pomoć i liječenje. Otac je bio aktivno uključen u skrb za djecu te je izražavao svoju nemoć i zabrinutost oko problema u obitelji. Kod obje djevojčice zabilježeno je više epizoda samoozljeđivanja uz anksiozno-depresivnu simptomatologiju i izraženu emocionalnu labilnost, a kod mlađe djevojčice je recentno zabilježen i pokušaj suicida. Djevojčice su sve češće izostajale iz škole, a navodile su i poteškoće u vršnjačkim odnosima. Ambulanta obiteljske medicine postala je mjesto kontinuiranog praćenja, pružanja psihološke podrške djevojčicama i ocu te koordinacije s drugim službama.

Rasprava: U prikazanom slučaju, djevojčice su bile izložene majčinoj ovisnosti, emocionalnom zanemarivanju, verbalnom nasilju te disfunkcionalnim odnosima unutar obitelji. Dugotrajna izloženost takvim obiteljskim odnosima rezultirala je posljedicama na zdravlje djece, koje su se ispočetka očitovale somatskim tegobama, a zatim ozbiljnim narušavanjem psihičkog zdravlja djece, uključujući samoozljeđivanjem i anksiozno-depresivnim simptomima, što je kulminiralo pokušajem suicida. Djevojčice su imale poteškoća u školskim obvezama i socijalnom funkcioniranju, što se očitovalo učestalim izostancima, padom školskog uspjeha, izloženošću vršnjačkom nasilju te socijalnom izolacijom. U okolnostima majčinog odbijanja suradnje u liječenju, LOM-u preostaje pojačano skrbiti za ostale članove obitelji te u suradnji s drugim kolegama, socijalnom službom i odgojno-obrazovnim ustanovama pokušati prevenirati NID te smanjiti njihove reperkusije na zdravlje djece.

Zaključak: Česti dolasci djece u ambulantu zbog nespecifičnih somatskih tegoba, izostanci iz škole i teškoće u socijalnim interakcijama mogu upućivati na disfunkcionalnost obitelji. LOM koji skrbi za sve članove obitelji u jedinstvenoj je poziciji razumjeti i uočiti obiteljsku problematiku te ima ključnu ulogu u prevenciji NID kroz dugotrajno praćenje djece, pravovremenu intervenciju te koordinaciju s drugim službama i ustanovama, a s ciljem pružanja zaštite zdravlja djece u obitelji s disfunkcionalnim odnosima.

LITERATURA:

1. Webster EM. The Impact of Adverse Childhood Experiences on Health and Development in Young Children. Glob Pediatr Health. 2022 Feb 1;9.
2. Hodgson CR, Mehra R, Franck LS. Child and Family Outcomes and Experiences Related to Family-Centered Care Interventions for Hospitalized Pediatric Patients: A Systematic Review. Children (Basel). 2024 Aug 1;11(8).
3. Barnes MD, Hanson CL, Novilla LB, Magnusson BM, Crandall AAC, Bradford G. Family-Centered Health Promotion: Perspectives for Engaging Families and Achieving Better Health Outcomes. Inquiry. 2020;57.
4. Benić M. Teorijski modeli razumijevanja ishoda nepovoljnih iskustava u djetinjstvu. Socijalne teme. 2022 Dec 30;1(9):47–76.

Adverse Childhood Experiences – the Role of the Family Physician

Ema Alfirević[1], Lovorka Kovačec[1], Jelena Ević[2]

1. Health Centre Zagreb – Centre
2. Specialist Family Medicine Practice, PhD Jelena Ević, MD, Specialist in Family Medicine

Key words: Adverse childhood experiences (ACEs), family medicine, alcohol dependence, child mental health, family dysfunction
E-mail: kovacevicema@gmail.com
ORCID: Ema Alfirević: 0000-0001-8455-602X
Lovorka Kovačec: 0009-0006-9603-728X
Jelena Ević: 0009-0004-8116-9787

Introduction with aim: Adverse childhood experiences (ACEs) include various types of abuse and neglect, as well as unfavorable aspects of a child's environment that may cause trauma or chronic stress during the first eighteen years of life. Exposure to one or more ACEs significantly increases the risk of depression, substance use disorders, other chronic diseases, and reduces life expectancy. The aim of this case study is to highlight the role of the family physician (FP) in the care of two young children growing up in a dysfunctional family affected by maternal alcohol use disorder, and to examine the impact on their health.

Case report: The FP provided care for a four-member family, comprising a mother, a father, and two daughters aged 13 and 11 years. The daughters regularly visited doctor's office accompanied by their father. Initially, the main causes of their visits were mostly nonspecific somatic complaints such as headaches and abdominal pain. Over time, an increasing need for psychological and emotional support emerged, and recently psychiatric treatment became necessary. The mother had a history of alcohol dependence, and continued occasional alcohol consumption despite prior treatment at a psychiatric facility. She lacked insight into her addiction and the severity of her condition. According to family members, she was often verbally aggressive under the influence of alcohol. She communicated with the FP mainly by telephone and refused further assistance and treatment. The father was actively involved in childcare and expressed feelings of helplessness and concern regarding family problems. Both children experienced multiple episodes of self-harm, accompanied by anxiety-depressive symptoms and pronounced emotional lability. The younger daughter recently attempted suicide. They had increasing school absences and reported difficulties in peer relationships. The family medicine office became a place of continuous monitoring, psychological support for the children and their father, and coordination with other services.

Discussion: In the presented case, the children were exposed to maternal alcohol addiction, emotional neglect, verbal abuse, and dysfunctional family relationships. Long-term exposure to such an environment resulted in adverse health outcomes, initially presenting as somatic complaints and later progressing to serious mental health deterioration, including episodes of self-harm, anxiety-depressive symptoms, and ultimately a suicide attempt. They also experienced difficulties in academic performance and social functioning, reflected in frequent school absences, declining academic achievement, exposure to peer violence, and social isolation. In circumstances of mother's refusal to cooperate in treatment, the FP must intensify care for the rest of the family and, in collaboration with other healthcare professionals, social services, and educational institutions, attempt to prevent ACEs and mitigate their negative impact on the children's health .

Conclusion: Frequent visits to a family medicine office for nonspecific somatic complaints, school absences, and difficulties in social interactions may indicate a dysfunctional family environment. A FP who provides care for all family members is in a unique position to identify and address family-related issues and plays a crucial role in preventing ACEs through long-term follow-up, timely intervention, and coordination with other services and institutions, with the aim of protecting the health of children growing up in dysfunctional family environments.

REFERENCES:

1. Webster EM. The Impact of Adverse Childhood Experiences on Health and Development in Young Children. Glob Pediatr Health. 2022 Feb 1;9.
2. Hodgson CR, Mehra R, Franck LS. Child and Family Outcomes and Experiences Related to Family-Centered Care Interventions for Hospitalized Pediatric Patients: A Systematic Review. Children (Basel). 2024 Aug 1;11(8).
3. Barnes MD, Hanson CL, Novilla LB, Magnusson BM, Crandall AAC, Bradford G. Family-Centered Health Promotion: Perspectives for Engaging Families and Achieving Better Health Outcomes. Inquiry. 2020;57.
4. Benić M. Teorijski modeli razumijevanja ishoda nepovoljnih iskustava u djetinjstvu. Socijalne teme. 2022 Dec 30;1(9):47–76.

Biološka terapija reumatoidnog artritisa - od smjernica do prakse

Anamarija Ostrun[1], Sanela Lozančić Suhina[1]

1. Dom zdravlja Osječko - baranjske županije

Ključne riječi: reumatoidni artritis, biološka terapija, smjernice, praksa
E adresa: anamarija.mehic@gmail.com
ORCID: Anamarija Ostrun: 0000-0001-9847-7875
Sanela Lozančić Suhina: 0009-0006-2872-0909

Uvod s ciljem: Reumatoidni artritis (RA) kronična je sistemska autoimuna bolest obilježena perzistentnom upalom sinovije koja dovodi do progresivnog oštećenja zglobova, funkcionalnog onesposobljavanja i smanjenja kvalitete života. Pravodobna dijagnoza i rano uvođenje odgovarajuće terapije ključni su za sprječavanje ireverzibilnog oštećenja zglobova i postizanje remisije. Uvođenje biološke terapije značajno je unaprijedilo liječenje RA, osobito u bolesnika s neadekvatnim odgovorom na nesteroidne antireumatike. Biološki lijekovi ciljano djeluju na ključne mehanizme upale, a suvremene smjernice naglašavaju pristup „treat-to-target“ kao temelj liječenja. Ipak, primjena smjernica u svakodnevnoj kliničkoj praksi često je zahtjevnija nego u teoriji. Ograničenja zdravstvenog sustava te individualne karakteristike bolesnika značajno utječu na terapijske odluke. Cilj je ovog rada prikazati kako se, kroz primjenu smjernica, u stvarnoj kliničkoj praksi dolazi do konačnog izbora biološke terapije u liječenju reumatoidnog artritisa, uz naglasak na razliku između teorijskih preporuka i njihove praktične provedbe.

Prikaz slučaja: Pacijentica u dobi od 47 godina javila se u ordinaciju obiteljske medicine zbog bolova u malim zglobovima šaka, lijevom ramenu, lijevom kuku te oba koljena. Navodi i tegobe u vidu suhoće očiju, uz učestalo nakupljanje sekreta koje opisuje kao „krmelje“. Zbog sumnje na upalnu reumatsku bolest provedena je imunološka obrada koja je uključivala reumatoidni faktor (RF) koji je bio 69, Waaler-Roseov test (WR), antinuklearna protutijela (ANF)-1:1000, anti-dsDNA protutijela, anticitrulinska protutijela (anti-CCP) -1774 te ENA screen koji je bio pozitivan. Zabilježene su povišene vrijednosti CRP-a (20) i sedimentacije eritrocita (40). Učinjen je i rendgen šaka i stopala nakon čega je pacijentica upućena na pregled reumatologa. Po postavljanju dijagnoze RA započeta je terapija nesteroidnim antireumatikom uz nedostatan klinički odgovor. Slijedilo je uvođenje metotreksata peroralno, koji pacijentica nije podnosila, nakon čega je terapija promijenjena na metotreksat u parenteralnom obliku. I ovaj oblik terapije bio je loše toleriran te je zbog porasta jetrenih enzima obustavljen. S metotreksatom uveden je i sulfasalazin, no unatoč tome nije postignuta zadovoljavajuća kontrola bolesti. S obzirom na nepodnošenje primijenjene terapije i perzistenciju aktivne bolesti, donesena je odluka o uvođenju biološke terapije upadacitinibom. Procjena aktivnosti bolesti i terapijski odgovor praćeni su pomoću indeksa DAS28, koji uključuje broj bolnih i otečenih zglobova, vrijednosti SE ili CRP-a te bolesnikovu subjektivnu procjenu aktivnosti bolesti na VAS-u od 1 do 10. Funkcionalni status pacijentice procjenjivan je pomoću upitnika HAQ (Health Assessment Questionnaire), koji obuhvaća pitanja vezana uz svakodnevne aktivnosti i stupanj poteškoća u njihovom izvođenju.

Zaključak: Smjernice liječenja jasno definiraju terapijski algoritam i redoslijed uvođenja lijekova s ciljem racionalne i sigurne primjene terapije. Prikazani slučaj pokazuje da je put do biološke terapije u svakodnevnoj kliničkoj praksi često dugotrajan i zahtjevan uz nužnu suradnju s reumatologom. Tijekom tog razdoblja bolesnici nerijetko trpe izražene bolove, funkcionalno su ograničeni i suočeni s narušenom kvalitetom života, dok se zbog nužnosti poštivanja smjernica mora proći kroz više terapijskih koraka koji ne dovode uvijek do zadovoljavajućeg učinka ili su loše podnošljivi. Iako su smjernice neophodne za standardizaciju i sigurnost liječenja, klinička praksa zahtijeva individualizirani pristup svakom bolesniku. Pravodobno prepoznavanje neuspjeha terapije i brže donošenje odluka o eskalaciji liječenja može imati ključnu ulogu u sprječavanju progresije bolesti i trajnog onesposobljenja.

LITERATURA:

1. Brown P, Pratt AG, Hyrich KL. Therapeutic advances in rheumatoid arthritis. BMJ. 2024;384.
2. Bulpitt KJ. Biologic therapies in rheumatoid arthritis. Curr Rheumatol Rep. 1999 Dec;1(2):157–163. doi:10.1007/s11926-999-0013-5.
3. Salaffi F, Carotti M, Gasparini S, Intorcia M, Di Carlo M. Targeting rheumatoid arthritis: a molecular perspective on biologic therapies and clinical progress. J Biol Eng. 2025;19:67.
4. Smolen JS, Landewé RBM, Bijlsma JWJ, Burmester GR, Dougados M, Kerschbaumer A, et al. EULAR recommendations for the management of rheumatoid arthritis with synthetic and biological disease-modifying antirheumatic drugs: 2022 update. Ann Rheum Dis. 2023;82(6):685-699.
5. Singh JA, Hossain A, Tanjong Ghogomu E, Mudano AS, Tugwell P, Wells GA. Biologic or tofacitinib monotherapy for rheumatoid arthritis in people with traditional disease-modifying anti-rh eumatic drug (DMARD) failure: a Cochrane systematic review and network meta-analysis (NMA). Cochrane Database Syst Rev. 2016;11.

Biological Therapy of Rheumatoid Arthritis – From Guidelines to Clinical Practice

Anamarija Ostrun[1], Sanela Lozančić Suhina[1]

1. Osijek-Baranja County Health Centre

Key words: rheumatoid arthritis, biologic therapy, guidelines, clinical practice
E-mail: anamarija.mehic@gmail.com
ORCID: Anamarija Ostrun: 0000-0001-9847-7875
Sanela Lozančić Suhina: 0009-0006-2872-0909

Introduction with aim: Rheumatoid arthritis (RA) is a chronic systemic autoimmune disease characterized by persistent synovial inflammation, leading to progressive joint damage, functional disability, and reduced quality of life. Timely diagnosis and early initiation of appropriate therapy are crucial for preventing irreversible joint damage and achieving remission. The introduction of biologic therapy has significantly improved the management of RA, particularly in patients with an inadequate response to nonsteroidal anti-inflammatory drugs. Biologic agents act in a targeted manner on key inflammatory pathways, and current guidelines emphasize a treat-to-target approach as the cornerstone of RA management. Nevertheless, the implementation of guidelines in everyday clinical practice is often more challenging than in theory. Limitations of the healthcare system, as well as individual patient characteristics, substantially influence therapeutic decision-making. The aim of this paper is to illustrate how, through the application of clinical guidelines, the final choice of biologic therapy in the treatment of rheumatoid arthritis is reached in real-world clinical practice, with particular emphasis on the discrepancy between theoretical recommendations and their practical implementation.

aA 47-year-old female patient presented to a family medicine clinic with pain in the small joints of the hands, the left shoulder, the left hip, and both knees. She also reported symptoms of ocular dryness accompanied by frequent accumulation of discharge, described as “eye crusting.” Due to suspicion of an inflammatory rheumatic disease, an immunological workup was performed, which revealed an elevated rheumatoid factor (RF) of 69, a positive Waaler–Rose test (WR), antinuclear antibodies (ANA) at a titer of 1:1000, anti–double-stranded DNA antibodies (anti-dsDNA), markedly elevated anti–citrullinated protein antibodies (anti-CCP) at 1774, and a positive extractable nuclear antigen (ENA) screen. Elevated inflammatory markers were also recorded, with C-reactive protein (CRP) of 20 and an erythrocyte sedimentation rate (ESR) of 40. Plain radiographs of the hands and feet were obtained, after which the patient was referred for rheumatological evaluation. Following the diagnosis of RA, therapy with a nonsteroidal anti-inflammatory drug was initiated, with insufficient clinical response. This was followed by the introduction of oral methotrexate, which the patient did not tolerate, leading to a switch to parenteral methotrexate. This formulation was also poorly tolerated and was discontinued due to an increase in liver enzyme levels. Sulfasalazine was introduced in combination with methotrexate; however, adequate disease control was not achieved. In view of intolerance to conventional therapy and persistent active disease, a decision was made to initiate biologic therapy with upadacitinib. Disease activity and therapeutic response were monitored using the DAS28 index, which incorporates the number of tender and swollen joints, ESR or CRP values, and the patient’s global assessment of disease activity on a visual analogue scale (VAS) ranging from 1 to 10. The patient’s functional status was assessed using the Health Assessment Questionnaire (HAQ), which evaluates limitations in daily activities and the degree of difficulty experienced in performing them.

Conclusion: Treatment guidelines clearly define the therapeutic algorithm and the sequence of drug introduction to ensure rational and safe therapy administration. The presented case demonstrates that the pathway to biologic therapy in everyday clinical practice is often prolonged and challenging, requiring close collaboration with a rheumatologist. During this period, patients frequently experience significant pain, functional limitations, and impaired quality of life, while adherence to guideline-recommended steps necessitates multiple therapeutic stages that do not always result in satisfactory outcomes or may be poorly tolerated. Although guidelines are essential for standardizing care and ensuring safety, clinical practice demands an individualized approach for each patient. Timely recognition of therapeutic failure and prompt decision-making regarding treatment escalation may play a crucial role in preventing disease progression and permanent disability.

REFERENCES:

1. Brown P, Pratt AG, Hyrich KL. Therapeutic advances in rheumatoid arthritis. BMJ. 2024;384.
2. Bulpitt KJ. Biologic therapies in rheumatoid arthritis. Curr Rheumatol Rep. 1999 Dec;1(2):157–163. doi:10.1007/s11926-999-0013-5.
3. Salaffi F, Carotti M, Gasparini S, Intorcia M, Di Carlo M. Targeting rheumatoid arthritis: a molecular perspective on biologic therapies and clinical progress. J Biol Eng. 2025;19:67.
4. Smolen JS, Landewé RBM, Bijlsma JWJ, Burmester GR, Dougados M, Kerschbaumer A, et al. EULAR recommendations for the management of rheumatoid arthritis with synthetic and biological disease-modifying antirheumatic drugs: 2022 update. Ann Rheum Dis. 2023;82(6):685-699.
5. Singh JA, Hossain A, Tanjong Ghogomu E, Mudano AS, Tugwell P, Wells GA. Biologic or tofacitinib monotherapy for rheumatoid arthritis in people with traditional disease-modifying anti-rh eumatic drug (DMARD) failure: a Cochrane systematic review and network meta-analysis (NMA). Cochrane Database Syst Rev. 2016;11.

Premošćivanje socijalne i kliničke skrbi: Procjena socijalnih odrednica zdravlja u europskoj primarnoj zdravstvenoj zaštiti

Marija Zafirovska[1,2], Aleksandar Zafirovski[1,2,3], Ljubin Šukriev[1], Maria Isabel Fernández San Martín[4], María Rodríguez Barragán[4], Ana Clavería Fontán[5], Alba Pons Revuelta[6], Sofia Baptista[7,8], Joana Morais[7], Dúnia Bel Verge[4,9]

1. Asocijacija liječnika opće/obiteljske medicine jugoistočne Europe (AGP/FM SEE), Skoplje, Makedonija
2. Sveučilište u Ljubljani, Medicinski fakultet, Ljubljana, Slovenija
3. Opća bolnica Jesenice, Jesenice, Slovenija
4. Institut Català de la Salut (ICS), Barcelona, Španjolska
5. Servizo Galego de Saúde (SERGAS), Galicija, Španjolska
6. Servizo Galego de Saúde (SERGAS), Pontevedra, Španjolska
7. Medicinski fakultet, Sveučilište u Portu, Porto, Portugal
8. Bolnica CUF Porto, Portugal
9. Autonomno sveučilište u Barceloni (UAB), Barcelona, Španjolska

Ključne riječi: socijalne odrednice zdravlja; primarna zdravstvena zaštita; elektronički zdravstveni kartoni; zdravstvene nejednakosti;
Adresa za dopisivanje: St.Vladimir Komarov No.40/6, 1000 Skopje, Sjeverna Makedonija
E adresa: m.zafirovska27@gmail.com
ORCID: Marija Zafirovska: 0000-0003-3166-1090
Aleksandar Zafirovski: 0000-0002-1259-688X
Ljubin Šukriev: 0000-0003-4625-8149
Maria Isabel Fernández San Martín: 0000-0001-9190-7182
María Rodríguez Barragán: 0000-0001-8018-0811
Ana Clavería Fontán: 0000-0001-9552-1260
Alba Pons Revuelta: 0009-0009-7020-5574
Sofia Baptista: 0000-0002-2604-9369
Dúnia Bel Verge: 0009-0002-8596-5567

Uvod s ciljem: Socijalne odrednice zdravlja (SOZ) igraju središnju ulogu u oblikovanju zdravstvenih ishoda i značajno doprinose nejednakostima u zdravstvu. Iako je primarna zdravstvena zaštita u dobrom položaju za prepoznavanje i rješavanje socijalnih potreba, sustavno probiranje i dokumentiranje SOZ-a u europskim zdravstvenim sustavima još uvijek je ograničeno. Postojeći alati su heterogeni i često nisu integrirani u elektroničke zdravstvene kartone (EZK). Cilj ovog istraživanja je procijeniti kako zdravstveni radnici u primarnoj zdravstvenoj zaštiti procjenjuju i bilježe SOZ u rutinskoj praksi diljem Europe, s posebnim naglaskom na provedbu u Makedoniji i Sloveniji.

Metodologija: Ovo presječno opservacijsko istraživanje koristi anonimni online upitnik. Izvorno je razvijen u Španjolskoj i Portugalu te je dostupan na katalonskom, španjolskom, portugalskom i engleskom jeziku. Slovenija i Makedonija kasnije su se uključile u projekt te provele standardizirane prijevode i povratne prijevode s engleskog jezika. Sudionici su medicinske sestre/tehničari i liječnici obiteljske medicine u primarnoj zdravstvenoj zaštiti. Prikupljanje podataka traje od svibnja 2025. do lipnja 2026. godine. Koriste se prigodno i „snowball“ uzorkovanje putem znanstvenih društava, zdravstvenih ustanova i profesionalnih mreža. Ciljana veličina uzorka iznosi približno 200 sudionika po zemlji, s minimalno 50 po zemlji. Upitnik procjenjuje identifikaciju, prioritizaciju, uporabu alata za probir i dokumentiranje SOZ-a u EZK-ima, kao i samoprocijenjeno znanje i uočene prepreke. Provest će se deskriptivne i bivarijatne statističke analize.

Rezultati: U vrijeme pripreme sažetka prikupljanje podataka još je u tijeku, a konačni rezultati još nisu dostupni. Stoga se u ovoj fazi ne mogu prikazati empirijski nalazi. Istraživanje će generirati usporedive podatke o procjeni i dokumentiranju SOZ-a u uključenim europskim zemljama, uključujući Makedoniju i Sloveniju. Buduće analize ispitivat će varijabilnost u praksama probira, uporabu standardiziranih alata i sustava kodiranja, integraciju u EKZ te percipirane prepreke među zdravstvenim radnicima u primarnoj zdravstvenoj zaštiti.

Zakjučak: Ovo istraživanje će pružiti prvi sveobuhvatni pregled probira i dokumentiranja SOZ-a u europskoj primarnoj zdravstvenoj zaštiti, uključujući nove podatke iz Makedonije i Slovenije. Rezultati će poduprijeti razvoj standardiziranih, kontekstualno prilagođenih alata i strategija za integraciju SOZ-a u kliničku praksu. Jačanje procjene SOZ-a u primarnoj zdravstvenoj zaštiti može unaprijediti personaliziranu skrb, promicati jednakost i poboljšati ishode zdravlja populacije.

LITERATURA:

1. World Health Organization. Social determinants of health. World Health Organization. 2025 May 6. Available from: https://www.who.int/news-room/fact-sheets/detail/social-determinants-of-health
2. Hahn RA. What is a social determinant of health? Back to basics. J Public Health Res. 2021 Jun 23;10(4):2324. doi: 10.4081/jphr.2021.2324. PMID: 34162174; PMCID: PMC8672311.
3. Moor I, Spallek J, Richter M. Explaining socioeconomic inequalities in self-rated health: a systematic review of the relative contribution of material, psychosocial and behavioural factors. Journal of Epidemiology and Community Health. 2016 Sep 28;71(6):565-75. doi: 10.1136/JECH-2016-207589.

Bridging Social and Clinical Care: Assessment of Social Determinants of Health in European Primary Care

Marija Zafirovska[1,2], Aleksandar Zafirovski[1,2,3], Ljubin Šukriev[1], Maria Isabel Fernández San Martín[4], María Rodríguez Barragán[4], Ana Clavería Fontán[5], Alba Pons Revuelta[6], Sofia Baptista[7,8], Joana Morais[7], Dúnia Bel Verge[4,9]

1. Association of general practice/ family medicine of South-East Europe (AGP/FM SEE), Skopje, Macedonia
2. University of Ljubljana, Faculty of medicine, Ljubljana, Slovenia
3. General hospital Jesenice, Jesenice, Slovenia
4. Institut Català de la Salut (ICS), Barcelona, Spain
5. Servizo Galego de Saúde (SERGAS), Galicia, Spain
6. Servizo Galego de Saúde (SERGAS), Pontevedra, Spain
7. Faculty of Medicine, University of Porto, Portugal
8. CUF Porto Hospital, Porto, Portugal
9. Autonomous University of Barcelona (UAB), Barcelona, Spain

Key words: Social determinants of health; primary care; electronic health records; health inequalities
Correspondence address: St.Vladimir Komarov No.40/6, 1000 Skopje, Sjeverna Makedonija
E-mail: m.zafirovska27@gmail.com
ORCID: Marija Zafirovska: 0000-0003-3166-1090
Aleksandar Zafirovski: 0000-0002-1259-688X
Ljubin Šukriev: 0000-0003-4625-8149
Maria Isabel Fernández San Martín: 0000-0001-9190-7182
María Rodríguez Barragán: 0000-0001-8018-0811
Ana Clavería Fontán: 0000-0001-9552-1260
Alba Pons Revuelta: 0009-0009-7020-5574
Sofia Baptista: 0000-0002-2604-9369
Dúnia Bel Verge: 0009-0002-8596-5567

Introduction with aim: Social determinants of health (SDOH) play a central role in shaping health outcomes and contribute substantially to health inequalities. Although primary care is well positioned to identify and address social needs, systematic screening and documentation of SDOH remain limited in European health systems. Existing tools are heterogeneous and often not integrated into electronic health records (EHRs). This study aims to evaluate how primary care professionals assess and record SDOH in routine practice across Europe, with a focus on implementation in Macedonia and Slovenia.

Sample and methods: This cross-sectional observational study uses an anonymous online questionnaire. It was initially developed in Spain and Portugal and made available in Catalan, Spanish, Portuguese, and English. Slovenia and Macedonia later joined the project and conducted standardized translations and back-translations from English. Participants are nursing and family medicine professionals in primary care. Data collection is ongoing from May 2025 to June 2026. Convenience and snowball sampling are used through scientific societies, healthcare centers, and professional networks. The target sample size is approximately 200 participants per country, with a minimum of 50 per country. The questionnaire assesses the identification, prioritization, use of screening tools, and documentation of SDOH in EHRs, as well as self-perceived knowledge and perceived barriers. Descriptive and bivariate statistical analyses will be performed.

Results: At the time of abstract preparation, data collection is ongoing and final results are not yet available. Therefore, no empirical findings can be reported at this stage. The study will generate comparative data on the assessment and documentation of SDOH across participating European countries, including Macedonia and Slovenia. Future analyses will examine variability in screening practices, use of standardized tools and coding systems, integration into EHRs, and perceived barriers among primary care professionals.

Conclusion: This study will provide the first comprehensive overview of SDOH screening and documentation in European primary care, including new data from Macedonia and Slovenia. Findings will support the development of standardized, context-appropriate tools and strategies for integrating SDOH into clinical practice. Strengthening SDOH assessment in primary care may enhance personalized care, promote equity, and improve population health outcomes.

REFERENCES:

1. World Health Organization. Social determinants of health. World Health Organization. 2025 May 6. Available from: https://www.who.int/news-room/fact-sheets/detail/social-determinants-of-health
2. Hahn RA. What is a social determinant of health? Back to basics. J Public Health Res. 2021 Jun 23;10(4):2324. doi: 10.4081/jphr.2021.2324. PMID: 34162174; PMCID: PMC8672311.
3. Moor I, Spallek J, Richter M. Explaining socioeconomic inequalities in self-rated health: a systematic review of the relative contribution of material, psychosocial and behavioural factors. Journal of Epidemiology and Community Health. 2016 Sep 28;71(6):565-75. doi: 10.1136/JECH-2016-207589.

Pareza facijalnog živca u ordinaciji obiteljske medicine - je li svaki slučaj hitno stanje?

Daniel Dragojlović[1], Ana Čupić[1], Ana Romac[2]

1. Dom zdravlja Zagreb Zapad
2. Specijalistička ordinacija obiteljske medicine dr. sc. Jelena Ević, dr. med., spec. obiteljske medicine, Zagreb

Ključne riječi: pareza facijalnog živca, obiteljska medicina, prikaz slučaja
Adresa za dopisivanje: Vrtlarska 1a, Zagreb, Hrvatska
E adresa: dandragojlovic@gmail.com
ORCID: Daniel Dragojlović: 0009-0009-7050-5067
Ana Čupić: 0009-0004-2783-9460
Ana Romac: 0009-0000-8989-6138

Uvod s ciljem: Cilj prikaza slučaja je istaknuti ulogu kliničke procjene u ordinaciji obiteljske medicine pri zbrinjavanju periferne pareze facijalnog živca te mogućnost sigurnog ambulantnog liječenja u odabranim kliničkim situacijama.

Prikaz slučaja: Pacijent u dobi od 62 godine javlja se u ordinaciju obiteljske medicine zbog osjećaja opuštenosti desne strane lica i nemogućnosti zatvaranja desnog oka uz izraženo suzenje, koje traje približno pet dana. Negira smetnje vida, dvoslike, poremećaj govora ili gutanja, glavobolju, vrtoglavicu, febrilitet te simptome prethodne infekcije. U anamnezi navodi epizodu sličnih simptoma prije sedam mjeseci i tada zahvaćenu lijevu stranu lica. Zbog toga je bio dijagnostički obrađen u bolničkom hitnom prijemu, gdje je učinjen CT mozga s urednim nalazom te je postavljena sumnja na šećernu bolest tipa 2. Pacijent nije sklon daljnjoj dijagnostičkoj obradi i hospitalizaciji te traži ambulantno zbrinjavanje. Pri pregledu je hemodinamski stabilan, pri svijesti, orijentiran u svim smjerovima i urednog govora. Zjenice su izokorične, urednih reakcija na svjetlost, a bulbomotorika je uredna. Neurološki status pokazuje znakove periferne lezije desnog facijalnog živca: prisutno je sniženje desnog kuta usne, ptoza desne gornje vjeđe uz pojačanu lakrimaciju desnog oka te nemogućnost potpunog zatvaranja desnog oka. Desna strana čela je bez vidljivih nabora u odnosu na lijevu, nazolabijalni nabor desno je izglađen, a desna polovica lica nalazi se u nižem položaju u odnosu na lijevu. Ostali kranijalni živci uredno su inervirani. Pacijent je stabilan u Rombergovu položaju, testove koordinacije i tandem hod zvodi uredno, u položajima održavanja protiv gravitacije (AG položaji) gornje i donje ekstremitete održava simetrično. Vlastiti miotatički refleksi su simetrični, tonus muskulature uredan, a meningealni znakovi negativni. Otoskopski nalaz je uredan, bez promjena okolne kože. U ordinaciji obiteljske medicine uvedena je terapija sistemskim kortikosteroidom uz postupno smanjivanje doze, antivirusna terapija aciklovirom, gastroprotekcija, antidijabetik, vitaminska neurotropna potpora te lokalna terapija oka umjetnim suzama i lubrikantnom masti. Preporučena je laboratorijska obrada te je pacijent upućen na žurni oftalmološki pregled radi dodjele zaštitnih komorica, sa ciljem prevencije isušivanja rožnice i sekundarnih komplikacija. Upućen je i na daljnju obradu neurologu te na serološku obradu na boreliozu redovnim putem, uz redovite kontrole u ordinaciji obiteljske medicine.

Rasprava: Pareza facijalnog živca je neurološki simptom koji u primarnoj zdravstvenoj zaštiti predstavlja dijagnostički izazov zbog širokog spektra mogućih uzroka, među kojima mogu biti i hitna stanja. Ključni korak u procjeni je razlikovanje periferne od centralne pareze facijalnog živca, što se u većini slučajeva može učiniti detaljnim kliničkim pregledom. U prikazanom slučaju zahvaćenost cijele polovice lica, uključujući čelo, nemogućnost potpunog zatvaranja oka te odsutnost drugih fokalnih neuroloških ispada upućuju na perifernu leziju facijalnog živca.

Zaključak: U kliničkoj praksi često postoji tendencija upućivanja svih pacijenata s parezom facijalnog živca u hitnu službu. Međutim, dostupni dokazi i smjernice upućuju na to da ne zahtijevaju svi slučajevi hitnu bolničku obradu, osobito kada klinička slika jasno odgovara perifernoj parezi bez alarmantnih znakova. Takav pristup omogućuje sigurno započinjanje terapije u ordinaciji obiteljske medicine, uz planiranu dodatnu obradu i specijalističku oftalmološku procjenu radi prevencije komplikacija na oku.

LITERATURA:

1. Kim SJ, Lee HY. Acute peripheral facial palsy: recent guidelines and a systematic review of the literature. J Korean Med Sci. 2020;35(30):e245. doi:10.3346/jkms.2020.35.e245
2. Garro A, Nigrovic LE. Managing peripheral facial palsy. Ann Emerg Med. 2018;71(5):618–624. doi:10.1016/j.annemergmed.2017.08.039
3. Roob G, Fazekas F, Hartung HP. Peripheral facial palsy: etiology, diagnosis and treatment. Eur Neurol. 1999;41(1):3–9. doi:10.1159/000007990
4. Geißler K, Urban E, Volk GF, Klingner CM, Witte OW, Guntinas-Lichius O. Non-idiopathic peripheral facial palsy: prognostic factors for outcome. Eur Arch Otorhinolaryngol. 2021;278(9):3227–3235. doi:10.1007/s00405-020-06398-6
5. Jeong DY, Kim H, Cho SI. Clinical analysis of acute peripheral facial palsy in older adults. J Laryngol Otol. 2022;136(11):1113–1117. doi:10.1017/S0022215121004412

Facial nerve palsy in family medicine – is every case an emergency?

Daniel Dragojlović[1], Ana Čupić[1], Ana Romac[2]

1. Health Center Zagreb West
2. Family Medicine Practice Jelena Ević, MD, PhD, GP, Zagreb

Key words: Facial paralysis; Family practice; Case reports
Correspondence address: Vrtlarska 1a, Zagreb, Hrvatska
E-mail: dandragojlovic@gmail.com
ORCID: Daniel Dragojlović: 0009-0009-7050-5067
Ana Čupić: 0009-0004-2783-9460
Ana Romac: 0009-0000-8989-6138

Introduction with Aim: The aim of this case report is to highlight the role of clinical assessment in the family medicine office in the management of peripheral facial nerve palsy and the possibility of safe outpatient treatment in selected clinical situations.

Case report: A 62-year-old patient presented to a family medicine practice complaining of drooping of the right side of the face and inability to close the right eye, accompanied by marked tearing, lasting for approximately five days. He denied visual disturbances, diplopia, speech or swallowing difficulties, headache, dizziness, fever, or preceding infection symptoms. His medical history revealed a similar episode seven months earlier affecting the left side of the face, for which he was evaluated in a hospital emergency department, where brain CT showed no abnormalities and type 2 diabetes mellitus was suspected. The patient was reluctant to undergo further diagnostic procedures or hospitalization and sought outpatient management. On examination, he was hemodynamically stable, conscious, fully oriented, with normal speech. Pupils were equal and reactive, and ocular motility was intact. Neurological examination demonstrated signs of a peripheral lesion of the right facial nerve, including drooping of the right corner of the mouth, ptosis with increased lacrimation, inability to completely close the right eye. There was absence of right forehead wrinkling, flattening of the right nasolabial fold, and the right half of the face was positioned lower than the left. Other cranial nerves were intact. Romberg test, coordination, tandem gait, motor strength, reflexes, muscle tone, and meningeal signs were normal. Otoscopic examination was unremarkable, with no changes of the surrounding skin. In the family medicine office, treatment was initiated with a systemic corticosteroid with gradual dose tapering, antiviral therapy, gastroprotection, an antidiabetic agent, vitamin neurotropic supplementation, and local ocular therapy with artificial tears and lubricating ointment. Laboratory testing was recommended, and the patient was referred to an emergency ophthalmology clinic for protective eye shields to prevent corneal desiccation and secondary complications. Additionally, he was referred for further neurological assessment and serological testing for borreliosis via the standard referral pathway, with regular follow-ups in the family medicine office.

Discussion: Facial nerve palsy is a neurological symptom that presents a diagnostic challenge in primary care due to its broad differential diagnosis, including potentially urgent conditions. The key step in the initial assessment is distinguishing between peripheral and central facial nerve palsy, which can mostly be achieved through comprehensive clinical examination. In the presented case, involvement of the entire half of the face, including the forehead, and the absence of focal neurological deficits are all findings consistent with a peripheral facial nerve lesion.

Conclusion: In everyday clinical practice, there is often a tendency to refer all patients with facial nerve palsy to hospital emergency departments. However, not all cases require urgent hospital evaluation, particularly when the clinical presentation clearly corresponds to a peripheral facial nerve palsy without alarm features. This approach allows for safe initiation of treatment in the family medicine setting, with planned further diagnostics and ophthalmologic assessment to prevent ocular complications.

REFERENCES:

1. Kim SJ, Lee HY. Acute peripheral facial palsy: recent guidelines and a systematic review of the literature. J Korean Med Sci. 2020;35(30):e245. doi:10.3346/jkms.2020.35.e245
2. Garro A, Nigrovic LE. Managing peripheral facial palsy. Ann Emerg Med. 2018;71(5):618–624. doi:10.1016/j.annemergmed.2017.08.039
3. Roob G, Fazekas F, Hartung HP. Peripheral facial palsy: etiology, diagnosis and treatment. Eur Neurol. 1999;41(1):3–9. doi:10.1159/000007990
4. Geißler K, Urban E, Volk GF, Klingner CM, Witte OW, Guntinas-Lichius O. Non-idiopathic peripheral facial palsy: prognostic factors for outcome. Eur Arch Otorhinolaryngol. 2021;278(9):3227–3235. doi:10.1007/s00405-020-06398-6
5. Jeong DY, Kim H, Cho SI. Clinical analysis of acute peripheral facial palsy in older adults. J Laryngol Otol. 2022;136(11):1113–1117. doi:10.1017/S0022215121004412

Štucanje kao atipični simptom GERB-a – prikaz slučaja

Tomislav Vlatković[1], Ana Bokor[1], Dora Cvrtila[1]

1. Dom zdravlja Zagreb-Zapad

Ključne riječi: atipični simptomi, GERB, štucanje
Adresa za dopisivanje: Tomislav Vlatković, dr.med., Ozaljska 51, 10000 Zagreb
E adresa: tomislav.vlatkovic5@gmail.com
ORCID: Tomislav Vlatković: 0009-0001-2872-0937
Ana Bokor: 0009-0003-8106-8794
Dora Cvrtila: 0000-0001-7335-2267

Uvod s ciljem: Gastroezofagealna refluksna bolest (GERB) jedan je od najčešćih razloga dolaska liječniku obiteljske medicine, a radi se o poremećaju kontrakcije donjeg jednjačnog sfinktera što dovodi do refluksa želučanog sadržaja u jednjak. Premda je glavni simptom GERB-a žgaravica, simptomi mogu biti i prilično nespecifični, poput podrigivanja, mučnine, štucanja, bolova u prsima ili nekih od simptoma respiratornog sustava poput kroničnog suhog kašlja ili grlobolje, što je potrebno uzeti u obzir kako bi se postavila ispravna dijagnoza. U ovom radu prikazan je slučaj pacijenta s atipičnim simptomima kako bi se usmjerila pozornost i na takve znakove GERB-a.

Prikaz slučaja: 70-godišnji pacijent javlja se u ambulantu LOM-a žaleći se na napade dugotrajnog štucanja, s pogoršanjem u zadnje vrijeme. Napadi bi trajali i po nekoliko sati, a ponekad su ga budili i noću. Pacijent inače nije imao tipičnu žgaravicu, ali je ponekad noću osjećao nespecifičnu nelagodu iza prsne kosti, a također i povremenu grlobolju, poglavito ujutro te češće podrigivanje. Od dosadašnjih bolesti u anamnezi imao je arterijsku hipertenziju, dislipidemiju i stenozu karotidne arterije. Hranio se uglavnom uredno, no ponekad je imao običaj jesti kasno navečer. U statusu abdomen je bio mekan, palpatorno bezbolan, bez znakova organomegalije, RR 135/81 mmHg, a auskultacija pluća bila je uredna. Obiteljska anamneza bila je negativna na karcinom želuca. U osobnoj anamnezi u mlađim danima ponekad je imao dispeptične tegobe, što je sve upućivalo na to da tegobe imponiraju refluksu. Pacijentu je stoga propisan pantoprazol 40 mg 1,0,0 u trajanju od 4 tjedna, uz preporuku zdrave prehrane, izbjegavanja ljutog, začinjenog, alkohola i kofeinskih pripravaka te uz preprouku da ne jede 2 h prije spavanja. Nakon mjesec dana na kontroli pacijent je navodio dobru regresiju tegoba, nije bilo grlobolje i imao je samo jednu epizodu štucanja, ali ga simptomi nisu budili noću. Preporučeno je nastaviti pantoprazol još mjesec dana, a dalje prema potrebi te učiniti kontrolu gastroenterologa s pitanjem gastroskopije s obzirom na kronicitet tegoba.

Rasprava: GERB i simptomi povezani s njim jedan su od najčešćih razloga posjeta LOM-u. Prema nekim podacima, i do 30% svjetske populacije u razvijenim zemljama barem nekad pati od simptoma GERB-a, a simptomi se smatraju značajnim ako se javljaju više od dva puta tjedno. Osim toga, prolongacijom simptoma i nepravovremenim prepoznavanjem uzroka tegoba, refluks može dovesti do ozbiljnijih komplikacija, poput stenoze, striktura jednjaka, metaplazije sluznice ili karcinoma, stoga je potrebno obratiti pozornost i na atipične simptome refluksa: štucanja, dispepsije, suhog kašlja i slično, kako bi se na vrijeme započelo prikladno liječenje i spriječile komplikacije. Također, ukoliko su tegobe prisutne dugo vremena, valja razmisliti i o upućivanju pacijenta na detaljniju dijagnostiku, u prvom redu gastroskopiju.

Zaključak: Neprepoznati GERB s vremenom dovodi do komplikacija te narušava pacijentovu kvalitetu života. Navedeno se može spriječiti pravovremenim postavljanjem dijagnoze i ciljanom terapijom koja je relativno jednostavna (IPP i korekcija životnih navika). Uloga je obiteljskog liječnika obratiti pažnju na atipične simptome GERB-a, pravovremeno posumnjati na dijagnozu i započeti ciljanu terapiju te prema procjeni uputiti bolesnika na dijagnostičku obradu u svrhu prevencije komplikacija.

LITERATURA:

1. El-Serag HB, Sweet S, Winchester CC, Dent J. Update on the epidemiology of gastro-oesophageal reflux disease: a systematic review. Gut. 2014 June. 2. Tytgat GN, McColl K, Tack J et al. New algorithm for the treatment of gastro-oesophageal reflux disease. Aliment Pharmacol Ther. 2008; 27(3): 249-56.
2. Hunt R, Armstrong D, Katelaris P et al. GERD Global Perspective on Gastroesophageal Reflux Disease. World Gastroenterology Organisation Global Guidelines. 2015.
3. Hunt R, Armstrong D, Katelaris P et al. GERD Global Perspective on Gastroesophageal Reflux Disease. World Gastroenterology Organisation Global Guidelines. 2015.

Hiccups as an Atypical Symptom of GERD – Case Report

Tomislav Vlatković[1], Ana Bokor[1], Dora Cvrtila[1]

1. Health care center Zagreb – West

Key words: atypical symptoms, GERD, hiccups
Correspondence address: Tomislav Vlatković, dr.med., Ozaljska 51, 10000 Zagreb
E-mail: tomislav.vlatkovic5@gmail.com
ORCID: Tomislav Vlatković: 0009-0001-2872-0937
Ana Bokor: 0009-0003-8106-8794
Dora Cvrtila: 0000-0001-7335-2267

Introduction with aim: Gastroesophageal reflux disease (GERD) is one of the most common reasons for visits to a family physician. It's a disorder of lower esophageal sphincter, leading to the reflux of gastric acid into esophagus. Although heartburn is the primary symptom of GERD, symptoms may also be quite nonspecific, such as belching, nausea, hiccups, chest pain, or certain respiratory symptoms like chronic dry cough or sore throat. These manifestations should be taken into account in order to establish an accurate diagnosis. This case report presents a case of a patient with atypical symptoms to draw attention to such manifestations of GERD.

Case Presentation: A 70-year-old patient, presented to a general physitian with episodes of prolonged hiccups that had recently worsened, sometimes lasting several hours and occasionally awakening him at night. He denied typical heartburn but reported intermittent nocturnal retrosternal discomfort, sore throat, especially in morning and belching. His medical history included arterial hypertension, dyslipidemia, and carotid artery stenosis. Physical examination was unremarkable, with normal abdominal findings and blood pressure of 135/81 mmHg. Auscultation of the lungs was also unremarkable. Family history was negative for gastric cancer. The clinical presentation suggested gastroesophageal reflux. The patient was treated with pantoprazole 40 mg once daily for four weeks, along with dietary and lifestyle modifications, especially recommendation not to eat late. At one-month follow-up, he reported marked symptom improvement, with only one mild episode of hiccups and no nocturnal symptoms. Continued therapy and gastroenterology follow-up with consideration of gastroscopy were recommended, considering the chronicity of the problems.

Discussion: Gastroesophageal reflux disease (GERD) and its associated symptoms are among the most common reasons for visits to family medicine physician. According to some data, up to 30% of the population in developed countries experience symptoms of GERD at least occasionally, with symptoms considered clinically significant when they occur more than twice per week. Furthermore, prolonged symptoms and delayed recognition of them may lead to serious complications, including stenosis, esophageal strictures, mucosal metaplasia, or carcinoma. Therefore, attention should be paid to atypical reflux symptoms such as hiccups, dyspepsia, dry cough, or respiratory complaints in order to initiate appropriate treatment in a timely manner and prevent the development of further complications. Additionally, if symptoms persist over a prolonged period, referral for more detailed diagnostic evaluation - primarily gastroscopy - should be considered.

Conclusion: Unrecognized GERD can lead to complications over time and affects the patient's quality of life. This can be prevented with early diagnosis and targeted therapy (PPI and lifestyle changes). The role of the family physitian is to notice atypical GERD symptoms, suspect the correct diagnosis early to start targeted treatment, and, if necessary, refer the patient for diagnostic evaluation to prevent complications.

REFERENCES:

1. El-Serag HB, Sweet S, Winchester CC, Dent J. Update on the epidemiology of gastro-oesophageal reflux disease: a systematic review. Gut. 2014 June. 2. Tytgat GN, McColl K, Tack J et al. New algorithm for the treatment of gastro-oesophageal reflux disease. Aliment Pharmacol Ther. 2008; 27(3): 249-56.
2. Hunt R, Armstrong D, Katelaris P et al. GERD Global Perspective on Gastroesophageal Reflux Disease. World Gastroenterology Organisation Global Guidelines. 2015.
3. Hunt R, Armstrong D, Katelaris P et al. GERD Global Perspective on Gastroesophageal Reflux Disease. World Gastroenterology Organisation Global Guidelines. 2015.

Zadovoljstvo komunikacijom u pedijatriji: presječno istraživanje

Iva Vrbanus Miletić[1], Ivana Klinar[2,3]

1. Klinika za dječje bolesti Zagreb
2. Dom zdravlja Zagreb Zapad
3. Medicinski fakultet, Hrvatsko katoličko sveučilište u Zagrebu

Ključne riječi: komunikacija, zdravstveni radnici, pedijatrija, roditelji, zadovoljstvo
Adresa za dopisivanje: Prilaz baruna Filipovića 11, Zagreb, Hrvatska
E adresa: ivana.klinar@unicath.hr
ORCID: Ivana Klinar: 0000-0001-6034-9579

Uvod i cilj: Unaprjeđenje komunikacijskog procesa jedan je od najvažnijih projekata u zdravstvenoj skrbi. Osobito se to odnosi na komunikaciju s djecom jer se tu očekuje pažljiva i empatična komunikacija kako prema djetetu tako i prema njegovim roditeljima i/ili skrbnicima. Edukacija svih sudionika u komunikacijskom lancu je imperativ i kontinuirani proces. Kako bi se razvili dobri međuljudski odnosi potrebno je provoditi jasnu, učinkovitu i asertivnu komunikaciju u zdravstvenom sustavu. Cilj rada bio je procijeniti komunikacijske vještine zdravstvenog osoblja i zadovoljstvo roditelja pacijenata komunikacijskim vještinama na pedijatrijskim odjelima i u specijaliziranim ambulantama Klinike za dječje bolesti Zagreb.

Metode: Provedeno je presječno istraživanje od svibnja do srpnja 2024. Podatci su prikupljeni s pomoću dva anonimna, validirana upitnika (Health Care Communication Questionnaire, HCCQ): jednog za roditelje/skrbnike pacijenata, a drugog za zdravstvene djelatnike. Ispitanici su na ljestvici od 1 (nimalo) do 5 (potpuno zadovoljni) ocjenjivali verbalnu i neverbalnu komunikaciju. Istraživanje je odobrilo Etičko povjerenstvo bolnice, a svi sudionici su potpisali suglasnost.

Rezultati: U istraživanju je sudjelovalo 253 ispitanika; 139 (54,9 %) roditelja/skrbnika pedijatrijskih pacijenata, i 114 (45,1 %) zdravstvenih djelatnika. Istraživanjem smo utvrdili visoku razinu sveukupnog zadovoljstva komunikacijom u zdravstvu. Najviše prosječne ocjene su dobile sljedeće kategorije: poštovanje privatnosti i potreba (4,8 i 4,7), ljubazno ponašanje (4,7) te jasno i precizno informiranje (4,6). Uočeno je da je najvišom ocjenom (ocjena=5 (%)) po pitanju zadovoljstva u procjeni zdravstvenih djelatnika u odnosu na komunikaciju prema roditeljima/skrbnicima najbolje ocijenjena neverbalna (75,5 %) i asertivna komunikacija (72,7 %), poštovanje potreba (71,2 %), a nižim ocjenama poštivanje privatnosti (53,2 %), smirenost (53,2 %), uspješnost konzultacije (54,0 %). Zdravstveni radnici su najvišom ocjenom (ocjena=5 (%)) ocijenili tvrdnje poštivanje potreba (70,2 %), neverbalnu (66,7 %) i asertivnu komunikaciju (56,1 %), a najniže poštivanje privatnosti (15,8 %), smirenost (15,8 %), upravljanje situacijom (17,5 %) te rješavanje problema (20,2%).

Zaključak: Ispitanici su zadovoljni sveukupnom komunikacijom u zdravstvu. Zdravstveni radnici su za svoju komunikaciju dali niže ocjene u kategorijama – nedostatak smirenosti, nemogućnost upravljanja situacijom, rješavanja problema i poštivanja privatnosti. Potrebna su daljnja istraživanja kako bi se utvrdili razlozi samokritičnosti zdravstvenih radnika i organizirale nove edukacije iz komunikacijskih vještina.

LITERATURA:

1. Ifrim RA, Klugarová J, Măguriță D, Zazu M, Mazilu DC, Klugar M. Communication, an important link between healthcare providers: a best practice implementation project. JBI Evid Implement. 2022 Aug 1;20(S1):S41-S48. doi: 10.1097/XEB.0000000000000319.
2. Shoaran M, Hajebrahimi S, Kabiri N, Salehi Pourmehr H, Talebpour A. Health care providers' communication with pediatric patients and carers: a best practice implementation project. JBI Evid Implement. 2025 Jan 1;23(1):24-32. doi: 10.1097/XEB.0000000000000425.
3. Tennant K, Long A, Toney-Butler TJ. Active Listening. [Updated 2023 Sep 13]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK442015/
4. Gremigni P, Sommaruga M, Peltenburg M. Validation of the Health Care Communication Questionnaire (HCCQ) to measure outpatients' experience of communication with hospital staff. Patient Educ Couns. 2008 Apr;71(1):57-64. doi: 10.1016/j.pec.2007.12.008.

Satisfaction with Communication in Pediatrics: A Cross-Sectional Study

Iva Vrbanus Miletić[1], Ivana Klinar[2,3]

1. Children's Hospital Zagreb
2. Health Center Zagreb – West
3. School of Medicine, Catholic University of Croatia

Key words: communication, healthcare professionals, pediatrics, parents, satisfaction.
Correspondence address: Prilaz baruna Filipovića 11, Zagreb, Hrvatska
E-mail: ivana.klinar@unicath.hr
ORCID: Ivana Klinar: 0000-0001-6034-9579

Introduction with Aim: Improving the communication process is one of the most critical projects in healthcare. This is particularly relevant in communication with children, where careful and empathetic engagement is expected toward both the child and their parents/caregivers. Education of all participants in the communication chain is an imperative and continuous process. To develop strong interpersonal relationships, it is necessary to implement clear, effective, and assertive communication within the healthcare system. The aim of this study was to assess the communication skills of healthcare staff and parental satisfaction with these skills in the pediatric wards and specialized outpatient clinics of the Children's Hospital Zagreb.

Methods: A cross-sectional study was conducted from May to July 2024. Data were collected using two anonymous, validated Health Care Communication Questionnaire (HCCQ) questionnaire: one for parents/caregivers and another for healthcare professionals. Participants rated verbal and non-verbal communication on a scale from 1 (not at all satisfied) to 5 (completely satisfied). The study was approved by the hospital's Ethics Committee, and all participants provided informed consent.

Results: The study included 253 participants: 139 (54.9%) parents/caregivers of pediatric patients and 114 (45.1%) healthcare professionals. The research established a high level of overall satisfaction with healthcare communication. The highest average scores were awarded to the following categories: respect for privacy and needs (4.8 and 4.7), polite behavior (4.7), and clear and precise information sharing (4.6). Regarding satisfaction in the assessment of healthcare workers' communication toward parents/caregivers, the highest scores (score=5 (%)) were given to non-verbal communication (75.5%), assertive communication (72.7%), and respect for needs (71.2%). Lower scores were observed for respect for privacy (53.2%), composure (53.2%), and consultation success (54.0%). Healthcare workers themselves rated the following highest (score=5 (%)): respect for needs (70.2%), non-verbal communication (66.7%), and assertive communication (56.1%). They gave the lowest ratings to respect for privacy (15.8%), composure (15.8%), situational management (17.5%), and problem-solving (20.2%).

Conclusion: Participants are satisfied with the overall communication in healthcare. Healthcare workers provided lower self-assessment scores in categories such as lack of composure, inability to manage situations, problem-solving, and respect for privacy. Further research is needed to determine the reasons for this self-criticism among healthcare workers and to organize new communication skills training.

REFERENCES:

1. Ifrim RA, Klugarová J, Măguriță D, Zazu M, Mazilu DC, Klugar M. Communication, an important link between healthcare providers: a best practice implementation project. JBI Evid Implement. 2022 Aug 1;20(S1):S41-S48. doi: 10.1097/XEB.0000000000000319.
2. Shoaran M, Hajebrahimi S, Kabiri N, Salehi Pourmehr H, Talebpour A. Health care providers' communication with pediatric patients and carers: a best practice implementation project. JBI Evid Implement. 2025 Jan 1;23(1):24-32. doi: 10.1097/XEB.0000000000000425.
3. Tennant K, Long A, Toney-Butler TJ. Active Listening. [Updated 2023 Sep 13]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK442015/
4. Gremigni P, Sommaruga M, Peltenburg M. Validation of the Health Care Communication Questionnaire (HCCQ) to measure outpatients' experience of communication with hospital staff. Patient Educ Couns. 2008 Apr;71(1):57-64. doi: 10.1016/j.pec.2007.12.008.

Comparative Analysis of Simulation-Based Education for Basic Life Support (BLS) and Anaphylactic Shock Among Nurses in Two Hospital Settings: The Kirkpatrick Model, the RACI Approach, and Quality Management

Biljana Tanevska Andonova[1], Katarina Stavrikj[1], Ljubin Shurkiev[2], Uroš Zafošnik[3]

1. Center for family medicine, Medical Faculty, Ss Cyril and Methodius, Skopje, North Macedonia
2. Association of general practice/ family medicine of South-East Europe
3. SIM centre, Primary healthcare research and development institute (IRROZ)

Ključne riječi: simulation-based education; Basic Life Support; anaphylactic shock; Kirkpatrick model; RACI approach; non-technical skills; patient safety
Adresa za dopisivanje: Londonska 4/1-26, Skopje, North Macedonia
E adresa: btanevska2002@yahoo.com
ORCID: Biljana Tanevska Andonova: 0009-0001-0899-7525
Katarina Stavrikj: 0000-0002-8319-4554
Ljubin Shukriev: 0000-0003-4625-8149
Uroš Zafošnik: 0000-0001-9334-2947

Introduction with aim: Simulation-based education supports the development of technical and non-technical skills that are essential for effective management of emergency medical situations. A major challenge in healthcare teamwork is unclear role allocation, which may lead to delays, task duplication, or omission of critical interventions and consequently compromise patient safety. This study aimed to evaluate simulation-based education for Basic Life Support and anaphylactic shock management using the Kirkpatrick model and the RACI approach, which provides structured role and responsibility allocation within teams (Responsible – task performer, Accountable – person with final responsibility, Consulted – expert advisor, Informed – informed team member).

Methods: A descriptive prospective evaluation study was conducted at two secondary healthcare institutions in North Macedonia: the University Clinic "Sv. Naum Ohridski" and the General Hospital "8 September" in Skopje. Structured simulation workshops included a brief theoretical introduction, realistic simulation scenarios, and facilitated debriefing. Participants were nurses and other healthcare professionals involved in emergency care. Training effectiveness was evaluated using the Kirkpatrick model at Level 1 (Reaction), Level 2 (Learning), and Level 4 (Results).

Results: A total of 232 participants were included in the simulation-based education. At the reaction level, 94.5% of participants reported that the Basic Life Support training met their expectations, and 95.7% rated simulation as the most effective approach for improving performance in emergency situations. For anaphylactic shock training, 83.3% of participants reported that the education met their expectations. At the learning level, average post-test scores increased by approximately 30% for Basic Life Support and by 35–40% for anaphylaxis management. The greatest improvements were observed in procedural sequencing, teamwork, and role clarity. At the results level, 89.5% of participants reported high confidence in performing Basic Life Support using an automated external defibrillator, and 73.5% reported increased readiness to independently manage anaphylactic shock. Participants emphasized that clear role allocation based on the RACI approach improved decision-making, communication, and overall team reliability.

Conclusion: Simulation-based education integrated with the RACI approach represents an effective and sustainable method for strengthening competencies in emergency care. This approach enhances technical and non-technical skills, improves team coordination, supports standardization of clinical processes, and contributes to improved patient safety.

LITERATURA:

1. Flin, R., O'Connor, P., & Crichton, M. (2008). Safety at the sharp end: A guide to non-technical skills. Ashgate Publishing.
2. Salas, E., Sims, D. E., & Burke, C. S. (2009). Is there a "big five" in teamwork? Small Group Research, 40(5), 555–599. https://doi.org/10.1177/1046496409337373
3. Project Management Institute. (2021). A guide to the project management body of knowledge (PMBOK® Guide) (7th ed.). PMI.
4. Kirkpatrick, D. L., & Kirkpatrick, J. D. (2006). Evaluating training programs: The four levels (3rd ed.). Berrett-Koehler Publishers.
5. Zafošnik, U., Cerovečki Nekić, V., Stojnić, N., Poženel Belec, A., & Klemenc-Ketiš, Z. (2024). Developing a competency framework for training with simulations in healthcare: A qualitative study. BMC Medical Education, 24, 180. https://doi.org/10.1186/s12909-024-05180-1