

HRANA U ZDRAVLJU I BOLESTI *FOOD IN HEALTH AND DISEASE*

ZNANSTVENO-STRUČNI ČASOPIS ZA NUTRICIONIZAM I
DIJETETIKU
*SCIENTIFIC PROFESSIONAL JOURNAL OF NUTRITION AND
DIETETICS*

Specijalno izdanje povodom Multidimenzionalnog međunarodnog
simpozijuma

„Šta očekuje pacijente i ljekare u nadolazećoj pandemiji gojaznosti“
Bijeljina, 24. Mart 2018

*Special edition occasion of the Multidimensional international
symposium
„What are doctors and patients to expect in the upcoming obesity
pandemic”
Bijeljina 24. March 2018*

Mart 2018
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FARMACEUTSKI FAKULTET TUZLA

SVEUČILIŠTE J.J. STROSSMAYERA U OSIJEKU
PREHRAMBENO-TEHNOLOŠKI FAKULTET OSIJEK

HRANA U ZDRAVLJU I BOLESTI
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Tuzla, Bijeljina, Mart / March 2018. god.

**HRANA U ZDRAVLJU I BOLESTI
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„Šta očekuje pacijente i ljekare u nadolazećoj pandemiji gojaznosti“
Bijeljina, 24. Mart 2018.**

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Javna zdravstvena ustanova bolnica „Sveti Vračevi“ u Bijeljini,
Udruženje „Društvo za debljinu“ u Bosni i Hercegovini
Ministarstvo zdravlja i socijalne zaštite Republike Srpske

TEMA

Multidimenzionalni međunarodni simpozijum „Šta očekuje pacijente i ljekare u nadolazećoj pandemiji gojaznosti“

SUORGANIZATORI

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Predgovor specijalnom izdanju Časopisa Hrana u zdravlju i bolesti

Specijalno izdanje časopisa je posvećeno multidimenzionalnom ekspertskom panel simpozijumu „Šta očekuje ljekare i pacijente u nadolazećoj pandemiji gojaznosti“. Simpozijum je održan u Bijeljini 24. 03. 2018. godine. Organizatori ovog značajnog međunarodnog skupa sa eminentnim predavačima iz zemalja regiona su Ministarstvo zdravlja i socijalne zaštite Republike Srpske, JZU bolnica „Sveti Vračevi,, u Bijeljini i Udruženje „Društvo za debljinu“ u BiH.

Gojaznost je jedna od najbrže rastućih pandemija modernog doba. Na planeti Zemlji broj gojaznih je prevazišao broj pothranjenih. Negativne reperkusije vezane za ovu pošast su slojevite, oboljeli imaju kraći životni vijek, a koji je uz sve to i manje kvalitetan. Ovim negativnim procesima je pogođena kako Republika Srpska tako i Federacija BiH.

Multidimenzionalna ekspertska panel konferencija pod nazivom „Šta očekuje pacijente i ljekare u nadolazećoj pandemiji gojaznosti“ je koncipirana tako da medicinskim i nemedicinskim profesionalcima donese najnovije informacije o najoptimalnijim modalitetima u liječenju gojaznosti. Transfer znanja sa najnovijim informacijama iz raličitih oblasti će učiniti međunarodno priznati stručnjaci. Ovaj simpozijum je koncipiran tako da specijalisti porodične medicine, endokrinolozi, gastroenterolozi, kardiolozi, pedijatri, psihijatri, nutricionisti, hirurzi, odnosno specijalizanti iz ovih grana medicine dobiju najnovije informacije o različitim modalitetima u liječenju gojaznosti.

Bez sumnje, da je primarna prevencija jedan od kapitalnih elemenata koji će dovesti do boljih rezultata u liječenju i smanjenju broja gojaznih. Ono što je takođe nepobitno je, da veliki broj gojaznih, čiji je broj u stalnom porastu, iziskuje odgovore kako složenom problemu gojaznosti pristupiti na najadekvatniji način.

Pojedinačna znanja različitih medicinskih profesionalaca iz različitih oblasti su velika. Naša ideja je kako ih preklopiti, obogatiti ih i usmjeriti ka tome da liječenje gojaznih pacijenata bude učinjeno na najoptimalniji način.

Prof. dr Fuad Pašić

Prof. dr Siniša Maksimović

Preface to the extraordinary edition of the Journal of Food in Health and Disease

The special issue of the magazine is dedicated to the multidimensional symposium "What are Doctors and Patients to Expect in the Upcoming Obesity Pandemic". The Symposium was held in Bijeljina on 24 March 2018. The organizers of this important international meeting with eminent lecturers from the countries of the region are the Ministry of Health and Social Welfare of the Republic of Srpska, the Public Health Institution, "Sveti Vračevi" Hospital in Bijeljina and "Obesity Society" Association in Bosnia and Herzegovina.

Obesity is one of the fastest-growing pandemics of the modern age. The number of the obese has exceeded the number of the malnourished on the planet Earth. The negative repercussions associated with this monster are layered, the sick ones having a shorter life expectancy of a less quality. Both the Republic of Srpska and the Federation of BiH have been affected by these negative processes.

A multi-dimensional expert panel conference entitled "What are doctors and patients to expect in the upcoming obesity pandemic" has been designed to provide medical and non-medical professionals with the latest information on the most optimal modality in the treatment of obesity. The transfer of knowledge with the latest information from various fields will be made by internationally recognized experts. This symposium is designed so that family medicine specialists, endocrinologists, gastroenterologists, cardiologists, pediatricians, psychiatrists, nutritionists, surgeons, or specialists from these branches of medicine obtain the latest information on various modes in the treatment of obesity.

Without a doubt, primary prevention is one of the chief elements that will lead to better results in the treatment and reduction in the number of obese persons. What is also undeniable is that a large number of obese persons, whose number is constantly growing, requires responses to the complex problem of obesity in the most adequate way.

Individual knowledge of different medical professionals from different fields is great. Our idea is to integrate them, to enrich them and to direct them so that healing of obese patients is done in the most optimal way.

Prof. Fuad Pašić, MD, PhD

Prof. Siniša Maksimović, MD, PhD

OPŠTE INFORMACIJE

Veb sajt simpozijuma

www.bolnicabijeljina.com

Akreditacija

Program simpozijuma je akreditovan od strane Savjeta za zdravlje ministarstva zdravlja i socijalne zaštite Republike Srpske

Adresa održavanja simpozijuma

Javna zdravstvena ustanova bolnica „Sveti Vračevi“ u Bijeljini

Etno selo „Stanišići“ sala „Moskva“

Telefon: +387 55 210 640

Predstavljanje kompanija

Molimo Vas da odvojite vrijeme i posjetite prezentacije naših sponzora. Više informacija ćete naći na našem website-u.

Internet

Besplatan Wi-fi je obezbjeđen u hotelu tokom trajanja simpozijuma.

Ručak i kafe pauze

Eko ručak je obezbjeđen za sve učesnike u subotu 24. marta 2018. godine u 14:30h.

Kafe pauze su predviđene prema programu.

Mobilni telefoni/Elektronika

Molimo Vas da Vaši mobilni telefoni i drugi elektronski uređaji budu utišani/isključeni tokom naučnog programa.

Pitanja za predavače tokom diskusije molimo učesnike koji žele da postave pitanja, da dizanjem ruku pozovu tehničko osoblje i sačekaju da dobiju mikrofon prije postavljanja pitanja.

Registracija

Vrijeme rada deska za registraciju: subotu 24. marta 2018. godine 09.00 - 19.00 časova.

GENERAL INFORMATION

Symposium website

www.bolnicabijeljina.com

Accreditation

Symposium is accredited at Health Council Ministry of Health and Social Welfare of Republika Srpska

Address

Public health institution of the hospital "Sveti Vračevi" in Bijeljina
Ethno village "Stanišići" hall "Moscow"
Phone: +387 55 210 640

Internet Access

Wi-Fi is provided free of charge for all participants. Please visit the registration desk for log in details.

Lunch and Refreshments

Eco lunch will be provided for all participants on Saturday, March 24, 2018 at 14:30.
Coffee breaks are scheduled according to the program.

Mobile/Cell Phone & Electronic

As a courtesy to speakers and other delegates, please ensure that mobile/cell phones, tablets and other electronic devices are switched to silent during sessions. Photography and filming during sessions is not permitted.

Questions to Speakers

During discussion periods delegates who wish to ask a question should raise their hand clearly and wait to be acknowledged by the chairperson. Please do not ask a question until you have been given a microphone.

Registration Desk

The conference organizers will be located at the Registration Desk and will be pleased to assist you with queries throughout the conference.

The Registration Desk will be open at the following time: Saturday, March 24, 2018, from 9:00 – 19:00 hrs.

PROGRAM SIMPOZIJUMA

Subota 24. mart 2018. godine, 12:00, Sala „Moskva“
Pozdravne riječi i otvaranje simpzijuma

- Direktor JZU bolnica „Sveti Vračevi“ u Bijeljini
Prof. dr Siniša Maksimović,
- Predsjednik udruženja „Društvo za debljinu“
u Bosni i Hercegovini,
Prof. dr Fuad Pašić
- Ministar zdravlja i socijalne zaštite Republike Srpske,
Dr Dragan Bogdanić,

SYMPOSIUM PROGRAM

Saturday March 24, 2018, 12:00 - Hall "Moscow

Welcome speech and opening ceremony

- Director of PHI hospital "Sveti Vračevi" in Bijeljina
Prof. dr Sinisa Maksimovic,
- President of association "Obesity society" in Bosnia and Herzegovina,
Prof. Dr Fuad Pasic,
- Minister of Health and Welfare of Republic Srpska,
Dr Dragan Bogdanic,

NAUČNI PROGRAM

SCIENTIFIC PROGRAM

Subota 24. mart 2018. godine, 12:10 - 14:10 – Sala „Moskva“
Saturday March 24, 2018, 12:10 - 14:10 - Hall "Moscow"

Predsjedništvo/Chairpersons:

1. Prof. Dr Siniš Maksimović
2. Prim. Dr Mladen Blagojević
3. Dr Mladen Kostić

1. Prof. Dr Siniša Maksimović,
2. Prim. Dr Mladen Blagojević,
3. Dr Mladen Kostić.

SESIJA I SESSION I

12.10 - 12:30

-Tip 2 dijabetesa i gojaznost, Akademik Prof. dr Nebojša M. Lalić, specijalista interne medicine, subspecijalista endokrinologije, Dekan Medicinskog fakulteta u Beogradu, Direktor klinike za endokrinologiju, dijabetes i bolesti metabolizma Kliničkog centra Srbije, Srpska akademija nauka i umetnosti (SANU) u Beogradu

-Type 2 diabetes and obesity, Academician Prof. Dr. Nebojsa M. Lalic, Specialist of internal medicine, subspecialist of endocrinology, Dean of the Medical Faculty of the University of Belgrade, Director of the Clinic for Endocrinology, Diabetes and Metabolism Diseases of the Clinical Center of Serbia, Serbian Academy of Sciences and Arts (SANU) in Belgrade.

12:30 – 12:50

-Lečenje gojaznosti kod pacijenata sa dijabetesom, Akademik Prof. dr Dragan Micić, Specijalista interne medicine, subspecijalista endokrinolog, Prodekan na Medicinskom fakultetu u Beogradu, Srpska akademija nauka i umetnosti (SANU) u Beogradu.

-Treatment of obesity in patients with diabetes, Academician Prof. dr Dragan Micić, Specialist of internal medicine, subspecialist of endocrinology, Vice-Dean of the Medical Faculty of the University of Belgrade, Serbian Academy of Sciences and Arts (SANU), Academy of Arts and Sciences of the Republic of Srpska (ANURS).

12:50 – 13:10

-Dijabetes, gojaznost i depresija začarani krug, Prof. dr Snježana Popović Pejičić, Specijalista interne medicine, subspecijalista endokrinologije, UKC Republike Srpske, Klinika za internu medicinu, odjeljenje endokrinologije.

-Diabetes, obesity and depression... Vicious circle, Prof. dr Snježana Popović Pejičić, Specialist of internal medicine, subspecialist of endocrinology, Clinic for internal medicine, department of endocrinology University Clinical Center of Republika Srpska in Banja Luka, Faculty of Medicine, University of Banja Luka.

13:10 – 13:30

-Ambulanta za gojaznost, kako je organizovati da bi rezultati u lečenju gojaznosti bili što bolji, Doc. dr Snežana Polovina, Specijalista interne medicine, subspecialista endokrinologije, Rukovodilac ambulante Multidisciplinarnog centra za gojaznost Kliničkog centra Srbije

-Ambulance for obesity, how to organize it so that the results in the treatment of obesity are as good as possible, Doc. dr Snežana Polovina, Specialist of internal medicine, subspecialist of endocrinology, Chief of Multidisciplinary Center for Obesity Clinical Center of Serbia in Belgrade.

13:30 – 13:50

-Paradoks gojaznosti, da li pravilna ishrana može biti lijek Prof. dr Midhat Jašić, Profesor na tehnološkom i farmaceutskom fakultetu u Tuzli. Glavni i odgovorni urednik časopisa Hrana u zdravlju i bolesti.

-A paradox of obesity, can a proper diet be a medicine, Prof. Dr Midhat Jasic Professor the Faculty of Technology and Pharmacy in Tuza, Editor-in-Chief Journal Food in health and disease.

13:50- 14.10

DISKUSIJA DISCUSSION

14:10 do 15:30

Prateći događaji/Accompanying events

Eko ručak, šetnja i promocije zdravih stilova život
Eco lunch, walking and promotion of healthy lifestyles

SESIJA II SESSION II

Subota 24. mart 2018. godine, 15:45 - 17:30 – Sala „Moskva“
Saturday March 24, 2018, 15:45 - 17:30 - Hall "Moscow"

15:45 – 16:05

-Psihološki problemi pretilih, Prof. dr Veljko Đorđević, specijalist psihijatar, Profesor na katedri za psihijatriju i psihološku medicinu Medicinskog fakulteta Sveučilišta u Zagrebu, Predsjednik Zagrebačkog instituta za kulturu zdravlja.

-Psychological problems obese, Prof. dr Veljko Djordjevic, Professor of Psychiatry and Psychology, Faculty of Medicine University of Zagreb, President of the Zagreb Institute for the Culture of Health.

16:05 – 16:25

-Endoskopski tretman gojaznosti, Prof. dr Milenko Bevanda, Specijalista interne medicine, subspecijalista gastroenterolog, Dekan Medicinskog fakulteta u Mostaru, Voditelj odjela za gastroenterologiju klinike za unutarnje bolesti KBC Mostar, Predsjednik Asocijacije gastroenterologa i hepatologa u BiH.

-Endoscopic treatment of obesity, Prof. dr Milenko Bevanda, Specialist of internal medicine, subspecialist gastroenterologist, Dean of the Faculty of Medicine in Mostar, Head of Department of Gastroenterology Clinic for Internal Diseases KBC Mostar, President of the Association of Gastroenterologists and Hepatologists in BiH, Dean of the Faculty of Medicine, University of Mostar.

16:25 – 16:45

-Barijatrijska hirurgija juče, danas, sutra ... Prof. dr Fuad Pašić¹, Siniša Maksimović²

1 Specijalista opšti hirurg, subspecijalista abdominalni hirurg, Šef Odjela Opšte abdominalne hirurgije UKC Tuzla, Predsjednik Udruženja „Društvo za debljinu“ u BiH.

2 Specijalista opšte hirurgije, direktor JZU bolnica “Sveti Vračevi” u Bijeljini, Medicinski fakultet Univerziteta u Banja Luci.

-Bariatric surgery yesterday, today, tomorrow ... Prof. dr Fuad Pašić¹, Sinisa Maksimovic²,

1 Specialist general surgeon, subspecialist abdominal surgeon, Head of General Abdominal Surgery UKC Tuzla, President of Association "Thickness Society" in BiH

2 Specialist general surgeon, director of Public health institution hospital „Sveti Vracevi“ in Bijeljina, Faculty of Medicine University of Banja Luka.

16:45: 17:05

-Patološka pretilost i maligne bolesti-uloga barijatrijske kirurgije, Prof. dr Miroslav Bekavac Bešlin, Klinički bolnički centar Sestre milosrdnice u Zagrebu, Odjel za gastroenterologiju i hepatobilijarno-pankreatičnu kirurgiju.

-Pathological obesity and malignant diseases - the role of bariatric surgery, Prof. dr Miroslav Bekavac Bešlin, University Hospital Sisters of Mercy in Zagreb, Department of Gastroenterology and hepatobiliary-pancreatic surgery.

- 17:05

**ZAKLJUČCI VEZANI ZA SIMPOZIJUM
CONCLUSIONS REGARDING THE SYMPOSIUM**

APSTRAKTI PREDAVANJA

Tip 2 dijabetesa i gojaznost

Akademik Prof. Dr. Nebojša M. Lalić, dekan Medicinskog fakulteta u Beogradu, direktor klinike za endokrinologiju, dijabetes i bolesti metabolizma Kliničkog centra Srbije, Srpska akademija nauka i umetnosti (SANU) u Beogradu

Brojna istraživanja iz različitih zemalja poslednjih decenija ukazuju na istovremeni porast prevalencije gojaznosti i tipa 2 dijabetesa (T2D) sugerirajući da su ova dva stanja usko povezana. Dominantnu ulogu u patogenetskoj povezanosti gojaznosti i nastanka T2D ima visceralno masno tkivo koje se karakteriše hipertrofičnim adipocitima, inflamacijom, poremećenim insulinskim signalnim mehanizmima i insulinskom rezistencijom. Rezultat navedenih poremećaja je povećana sekrecija slobodnih masnih kiselina sa posledičnim ektopičnim masnim depozitima u mišićnom tkivu i jetri uzrokujući insulinsku rezistenciju, i pankreasnim beta ćelijama sa posledičnim defektima insulinske sekrecije. Novije studije su ukazale da značajnu patogenetsku ulogu u ovom procesu imaju proinflamatorni citokini (tumor necrosis factor, TNF, interleukin 6, IL-6), poremećen metabolizam masnih kiselina, mitohondrijalna disfunkcija i poremećaji na nivou endoplazmatskog retikuluma. Sa druge strane, adipociti sekretuju i brojne adipokine koji imaju pro-hiperglikemijske efekte (rezistin, retinol binding protein 4, TNF, IL-6) i anti-hiperglikemijske efekte (leptin, adiponektin, visfatin, omentin) pa je poremećen međusobni odnos navedenih adipokina u gojaznosti jedan od glavnih mehanizama nastanka dijabetesa, pre svega kroz molekularne i metaboličke abnormalnosti u delovanju insulina (na nivou mišića, jetre i masnog tkiva) ali i defekte na nivou sekrecije insulina. Adipokini ostvaruju interakciju između masnog tkiva i beta ćelija ostrvaca pankreasa čineći tzv. adipo-insularnu osovinu koja može doprineti iscrpljivanju beta ćelija i razvoju manifestnog T2D. Sa druge strane, antidijabetogeni adipokin, adiponektin smatra se potencijalnim markerom u identifikaciji gojaznih osoba sa disfunkcionalnim masnim tkivom koji mogu postići najbolji učinak u prevenciji T2D. Detaljnije poznavanje navedenih složenih mehanizama povezanosti gojaznosti i dijabetesa usmerilo je dalja ispitivanja u pravcu prevencije nastanka T2D. U tom smislu je pokazano da nemedikamentne mere (dijeta i fizička aktivnost) sa ciljem redukcije gojaznosti

imaju značajno bolji efekat u prevenciji T2D u odnosu na postojeće medikamentne terapijske mogućnosti.

Lečenje gojaznosti kod pacijenata sa dijabetesom

Akademik Prof. Dr Dragan Micić, specijalista interne medicine, subspecijalista endokrinolog, prodekan na Medicinskom fakultetu u Beogradu, Srpska akademija nauka i umetnosti (SANU) u Beogradu.

Gojaznost doprinosi razvoju tipa 2 dijabetesa i pogoršanju njegove kontrole. Gubitak telesne težine je ključni cilj u terapiji za sve bolesnike sa tipom 2 dijabetesa koji imaju prekomernu telesnu težinu ili su gojazni. Dugotrajni rezultati primene metformina u Diabetes Prevention Programu su pokazali da primena metformina može da rezultira u održivom gubitku telesne težine. Mehanizam delovanja metformina na gubitak telesne težine je smanjenje unosa hrane, te se stoga metformin smatra prvim terapijskim agensom u gojaznih bolesnika sa dijabetesom. Terapija sa SGLT-2 inhibitorima može takodje da dovede do redukcije telesne težine za 3 do 5 kg kod gojaznih bolesnika sa tipom 2 dijabetesa. Specifična terapija sa lekovima za sniženje gojaznosti može da dovede do korekcije gojaznosti i poboljšanja metaboličke kontrole kod bolesnika sa tipom 2 dijabetesa. Orlistat je jedini lek za gojaznost koji deluje van centralnog nervnog sistema, dovodeći do redukcije apsorpcije masti u digestivnom traktu za 30 %. Fentermin je drugi agens koji se može prepisati u maksimalnom trajanju od tri meseca i njegov mehanizam je baziran na sniženju percepcije gladi. Kombinacija fentermina i topiramata sa dugotrajnim delovanjem je uvedena 2012 na tržište a mehanizam delovanja ove kombinacije je zasnovan na regulaciji različitih moždanih neurotransmitera. Lorkaserin je odobren za lečenje gojaznosti u 2012 godini i deluje kao supresor apetita. Kombinacija bupropiona i naltrexona sa produženim delovanjem je odobrena za terapijsku upotrebu u 2014 godini . Liraglutid je glukagonu sličan peptid-1 receptorski agonista i deluje tako što redukuje apetit i usporava gastrično pražnjenje. Terapija sa Liraglutidom kod gojaznih dijabetičara sa povećanim faktorima kardiovaskularnog rizika rezultuje u značajnom sniženju kardiovaskularnih događaja. Semaglutid je drugi GLP-1 analog koji dovodi do redukcije telesne težine i komplikacija nastalih usled gojaznosti. Ukoliko bolesnik ne izgubi 5% ili više od njegove telesne težine na prepisanom

leku, posle tri meseca, terapiju sa tim lekom treba obustaviti i preći na drugi vid terapije. Ukoliko medikamentozna terapija ne postigne željeni cilj, treba razmotriti mogućnost primene metaboličke hirurgije.

Dijabetes, gojaznost i depresija začarani krug

Prof. Dr Snježana Popović Pejičić, specijalista interne medicine, subspecijalista endokrinologije, UKC Republike Srpske, klinika za internu medicinu, odjeljenje endokrinologije.

Dijabetes, depresija i gojaznost predstavljaju kompleksan zdravstveni problem. U meta analizi recentnih longitudinalnih studija pokazana je bidirektna povezanost depresije i gojaznost. Depresija dovodi do gojaznosti dugotrajno aktivirajući hipotalamopituitarno-adrenalnu osovinu (HPA), ali se razmatraju i drugi mehanizmi, kao uticaj nivoa serotonina, koji ima važnu ulogu u interrekcijama moždanih funkcija, endokrinološkog i imunološkog sistema. Nedovoljan nivo serotonina dovodi do mentalnih poremećaja poput depresije, poremećaja spavanja, ili usljed „sindroma nedovoljne nagrade“, do trajnog povećanja apetita, kojim se nastoji kompenzovati njegov nedostatak. Posljedica je nastanak gojaznosti koja je takodje zbog djelovanja adipocitokina praćena imunom aktivacijom. Gojaznost predstavlja faktor rizika za nastanak dijabetesa, a može imati i svoje psihološke posljedice. Sama depresija ima direktan fiziološki uticaj na razvoj dijabetesa, jer je ustanovljeno češće postojanje insulinske rezistencije kod oboljelih od depresije. S druge strane, alteracija HPA osovine dovodi do povećanog oslobađanja kortizola i drugih kontraregulatornih hormona, povećana je imunoinflamatorna aktivacija te dolazi i do promjene u funkciji transportera glukoze. Inflamacija povezana sa dijabetesom predstavlja rizik za nastanak depresije, a i sami metabolički poremećaji, kao povećane stope hipo i hiperglikemije imaju ulogu u razvoju depresije. Komorbiditet depresije i gojaznosti pogoršava tok dijabetesa, jer su oboje rizik za nastanak vaskularnih bolesti. Rano prepoznavanje i liječenje depresije je važno jer se time može postići kako bolja tolerancija glukoze, tako i sprečavanje komplikacija bolesti. Pri liječenju depresije kod oboljelih od dijabetesa potrebno je voditi računa o potencijalu izazivanja metaboličkog sindroma i dobijanja natežini.

Ambulanta za gojaznost, kako je organizovati da bi rezultati u liječenju gojaznosti bili što bolji

Doc. Dr Snežana Polovina, specijalista interne medicine, subspecijalista endokrinologije, rukovodilac ambulante Multidisciplinarnog centra za gojaznost Kliničkog centra Srbije.

Lečenje gojaznog pacijenta mora da bude zasnovano na vodičima kliničke prakse i na intervencijama čiji je kvalitet naučno dokazan. Lečenje gojaznosti ima šire ciljeve od smanjenja telesne mase koji podrazumevaju lečenje komplikacija gojaznosti i smanjenje rizika za nastanak komplikacija i poboljšanje zdravlja. U svim centrima za lečenje gojaznosti u okviru COMs (Collaborating Centres for Obesity Management) pacijenti se tretiraju na isti način, po ustanovljenim protokolima koji su prihvaćeni konsenzusom. Svaka zemlja može da prilagodi protokol lečenja svojim uslovima ali bez značajnijih odstupanja u odnosu na Evropske vodiče za lečenje gojaznosti i barijatrijske operacije. Da bi centar za lečenje gojaznosti postao deo EASO-COMs, neophodno je da ispuni određene kriterijume koji se odnose na opremu, prostor, pacijente i zdravstveni kadar obučen za rad sa gojaznim bolesnicima.

U centru za gojaznost je neohodno da se godišnje pregleda najmanje 100 novih gojaznih pacijenata sa indeksom telesne mase $> 40 \text{ kg/m}^2$, pacijenata s kompleksnom gojaznošću i gojaznošću u sklopu retkih bolesti.

Svo osoblje u centru za gojaznost mora da bude obučeno za rad s gojaznim pacijentima i sprovođenju kliničkih istraživanja sa ovom kategorijom bolesnika. Takođe je obaveza zaposlenih u centru da svoje znanje i veštine usavršavaju na specijalizovanim kursevima kontinuirane medicinske edukacije za lečenje gojaznosti. Odabir pacijenata, hirurške tehnike i praćenja pacijenata treba da se odvija u skladu sa EASO/IFSO kriterijumima. Odluku o tome da se hirurško lečenje ponudi pacijentu kao terapijska mogućnost, donosi kompetentan multidisciplinarni konzilijum koji se sastoji od endokrinologa, hirurga, dijetologa/dijetetičara i anesteziologa. Po potrebi i drugi specijalisti mogu da budu članovi konzilijuma.

Paradoks gojaznosti, da li pravilna ishrana može biti lijek

Prof. Dr Midhat Jašić, profesor na tehnološkom i farmaceutskom fakultetu u Tuzli. Glavni i odgovorni urednik časopisa Hrana u zdravlju i bolesti.

Prehrana je značajan čimbenik koji utječe na gojaznost. Osim prehrane na gojaznost utječu: životne navike, običaji, stres, fizička aktivnosti, starosna dob, spol i drugi. Problem gojaznosti usložnjava njena neuro-bihejvoralna priroda s genetskom podlogom uz pomećaj homeostaze metabolizma energije. Značajan uticaj na pojavu gojaznosti imaju promjene životnih navika koje prati tehnološki progres društva. Do sada se različitim mjerama pokušavalo umanjiti i prevenirati pojava gojaznosti. Posljednjih destljeća zbog složenih uzroka nastanka epidimioloske mjere nisu usporile i zaustavile pandemiju gojaznosti.

Smatra se da je dobar način prevencije pandemije gojaznosti energetski balansirana prehrana. Temelji se na činjenici, da je kod smanjenje tjelesne mase, potrebno reducirati kalorijski unos hranom, a nakon postizanja ravnoteže održavati balans u prehrani i navikama.

Povećanje tjelesne mase često je uslovljeno raznovrsnim fiziološkim, psihološkim, sociološkim i drugim mehanizmima koji utječu na pojavu gladi. Posljednjih godina nastoje se znanstveno rasvijetliti glad i sitost istraživanjima utjecaja hormona na njihov nastanak. Danas se primjenjuju različite dijete koje najčešće nisu znanstveno utemeljene. Takve dijete postaju opscesija, koja se često pretvara u ortoreksiju.

U terapiji debljine preporučuje se integrativni pristup i metode koje su znanstveno utemeljene. Pravilna, balansirana ili uravnotežena prehrana, uz zdrave životne navike je nesumnjivo značajna u prevenciji i liječenju gojaznosti.

Psihološki problemi pretilih

Prof. Dr Veljko Đorđević, specijalista psihijatar, profesor na katedri za psihijatriju i psihološku medicinu Medicinskog fakulteta Sveučilišta u Zagrebu, predsjednik zagrebačkog instituta za kulturu zdravlja.

Suvremene spoznaje ukazuju da je pretilost kronični medicinski poremećaj koji nastaje kao rezultat vrlo složenih interakcija između genetskih, neuro-endokrinoloških, psiholoških, ponašajnih i okolinskih čimbenika. Zbog toga je i u liječenju debljine potreban interdisciplinarni i multimodalni pristup, s važnom ulogom psihijatra i psihologa. Pretilost je često “zajednički ishod” različitih emocionalnih problema s kojima se pojedinci suočavaju, a ne zna kako ih razriješiti. Jednako tako, gubitak tjelesne težine, a osobito održavanje dostignute tjelesne težine, za velik je broj ljudi jako težak proces koji zahtijeva dobru i stručnu psihološku podršku. Iako značajan broj pretilih osoba nema manifestni psihički poremećaj ili psihički čimbenici nisu bili vodeći uzrok nastanka pretilost, profesionalci iz područja mentalnog zdravlja imaju važnu ulogu u psihološkoj evaluaciji pacijenata koji započinju s programima mršavljenja, procjeni psiholoških simptoma koji se mogu pojaviti tijekom procesa mršavljenja, psihološkoj procjeni izrazito debelih pacijenata prije i poslije barijatrijske kirurgije, kao i u primjeni različitih psihoterapijskih, farmakoterapijskih i socioterapijskih intervencija. Uvijek je poželjno poznavati i obiteljsku situaciju te provoditi ukoliko je moguće i obiteljske intervencije. U Zagrebu je pokrenuta još 1985. godine Škola mršavljenja u današnjoj KBC „Sestre milosrdnice“, koja je razvila eklektički psihoterapijski pristup i u čijem su radu kao terapeuti sudjelovali psihijatar, psiholog i medicinska sestra. Klinička su iskustva kroz rad škole pokazala da su često puta uzroci pretilosti kronični stres, anksioznost, depresija ali i formiranje nezdravih navika jedenja od najranije dobi. Također je uočeno i da su određeni psihofarmaci značajan uzrok debljine kod osoba s duševnim bolestima. Obzirom na značajna postignuća ovakvih grupa u smislu redukcije i zadržavanja dostignute tjelesne težine, ovaj je model prepoznat u Hrvatskoj ali i u međunarodnim okvirima te se provodi sve do danas.

Endoskopski tretman gojaznosti

Prof. Dr Milenko Bevanda, specijalista interne medicine, subspecijalista gastroenterolog, dekan Medicinskog fakulteta u Mostaru, voditelj odjela za gastroenterologiju klinike za unutarnje bolesti KBC Mostar, predsjednik Asocijacije gastroenterologa i hepatologa u BiH.

Bioenterični intragastrični balon (BIB) prvi je put postavljen 1999. godine. Napravljen je od silikona, a ispunjen salinom. Obično se puni volumenom od 450-700 ml. Postavlja se i vadi

endoskopskim putem. Funkcionira na principu da je sitost povezana s volumenom hrane u želucu i s njegovom distenzijom. Kolecistokinin (CCK) je važan regulatorni hormon koji regulira osjećaj sitosti i njegovo lučenje je uvjetovano s distenzijom želuca, a sličnu ulogu mogu imati gelin i leptin. Mehanička distenzija trbuha balonom volumenom većim od 400 cc tijekom obroka, značajno smanjuje potrebu za unosom hrane.

Indikacije za postavljanje intragastričnog balona (IGB) su pacijentati s Indeksom tjelesne težine (ITT) između 28 i 40 koji nisu uspjeli dugoročno postići gubitak tjelesne težine konzervativnim načinom, u pacijenata s ITT većim od 55, prije barijatrijske procedure kako bi se smanjio rizik povezan s ekstenzivnim gubitkom TT i testiranje pacijentove odluke i želje da promjeni prehrambene navike prije implantacije gastričnog prstena. Pacijenti s poremećajem prehrane posebice oni s pretjeranom konzumacijom slatke hrane ili tzv. "binge eaters" s epizodama pretjerane konzumacije koji mogu "prevariti" balon izbor i načinom pripreme hrane. Kontraindikacije za postavljanje su raniji abdominalni kirurški ili barijatrijski zahvati, velika hijatalna hernija, ezofagitis teškog stupnja, peptički ulkus i neadekvatna suradnja (eng "compliance").

Preproceduralna evaluacija uključuje medicinsku povijest (uključujući ranije pokušaje gubitka tjelesne težine), fizikalni pregled, screening za bolesti povezane s pretilosti i odlučnost za promjenu životnog stila. Pacijent morao ići na procjenu nutritivnog statusa koji uključuje analizu dijetnog režima, načine i obrasce jedenja i edukaciju o postproceduralnoj dijeti. Laboratorijske pretrage koje je potrebno učiniti prije procedure su: kompletna krvna slika, glikemijski status, lipidogram, bubrežna funkcija, jetreni profil, urin, INR, status hormona štitnjače, vitamin D, željezo, B12 i folna kislina.

Balon se postavlja pod direktnom endoskopskom vizualizacijom i bez uporabe fluoroskopije. Nakon što je postavljanje završeno, insercijski kateter se odvoji i povuče s endoskopom.

Postproceduralna dijeta je vrlo važna. Na dan postavljanja je dozvoljeno piti male količine čaja ili vode. Na prvi i drugi konzumirati čaj i izgnječenu hranu ko nema mučnine. Trećeg dana se počinje s laganom hranom. Lijekovi koji se mogu koristiti su: inhibitori protonske pump (IPP), antiemetici, dimenhidrinat i NO metklopramid.

Balon se vadi se pod direktnom endoskopskom vizualizacijom. Punktira se i drenira njegov sadržaj te se vadi klještima – hvatačem.

Komplikacije nakon postavljanja balona su Intolerancija balona (rezultira ranim vađenjem), gastrični ulkus, gastrične erozije, ezofagitis, spontana deflacija, persizirajuće povraćanje, gastroezofagealni refluks i abdominalna bol. Postoje izvješća o teškim gastričnim perforacijama, opstrukciji tankog crijeva i značajnoj gastričnoj dilataciji.

Praćenje učinka nakon postavljanja IGB uključuje praćenje postotka gubitka na tjelesnoj težini (%TBWL) u postotak od gubitka prekomjerene tjelesne težine (%EWL). Prihvatljive granice sigurnosti i učinkovitosti kog IGB je prag za "primarnu" pretilost od 25% EWL izmjeren nakon 12 mjeseci, a prihvatljiv prag za ozbiljne nuspojave iznosi 5% ili manje.

Iako je IGB pokazao učinkovitost u velikog broja pacijenata, nekoliko studija je pokazalo da su uspjesi bili kratkoročni i da su neki pacijenti ponovno dobili na tjelesnoj težini nakon ukljanjanja balona. Razlog je vjerojatno što nije došlo do promjene životnog stila.

Možemo zaključiti da liječenje s IGB je više od prolazne terapijske znatiželje u gastroenterologiji. To je najbolji terapijski izbor za pacijente koji ne reagiraju na konzervativnu terapiju liječenja pretilosti, koji nisu kandidati za kirurški zahvat ili ne želi odmah ići na kirurški zahvat. Ponovno dobivanje na kilaži nakon vađenja balona i dalje ostaje izazov. Obećavajući rezultati su glede poboljšanja kvalitete života i poboljšanja općeg zdravstvenog stanja u pretilih pacijenata. Radi se o minimalno invazivnoj metodi za liječenje pretilosti i sličnih stanja koja će zasigurno imati mjesto u liječenju kroz dulji period.

Barijatrijska hirurgija juče, danas, sutra ...

Prof. Dr Fuad Pašić, specijalista opšti hirur, subspecijalista abdominalni hirur, šef odjela opšte abdominalne hirurgije UKC Tuzla, predsjednik Udruženja „Društvo za debljinu“ u BiH.

Prof. Dr Siniša Maksimović, specijalista opšti hirur, direktor JZU bolnica "Sveti Vračevi" u Bijeljini, Medicinski fakultet Univerziteta u Banja Luci.

Pretilost je jedna od nabraže rastućih pandemija modernog doba. Globalne negativne društvene reperkusije vezane za ovu pošast tek se u posljednje vrijeme kritički, objektivno multidimenzionalano sagledavaju. Iako se barijatrijski hirurški zahvati izvode unazad 60 godina tek se u posljednjih nekoliko godina pozicioniraju na mjesto koje im objektivno pripada. Vrlo malo hirurških grana se mogu pohvaliti takvim meteorskim uspjehom kao što je uspjeh postignut

u zadnje dvije decenije u barijatrijskoj hirurgiji. Hirurgija pretilosti, odnosno metabolički aspekti ove grane hirurgije podložni su novim ispitivanjima i možemo reći da nas u ovoj oblasti očekuje interesantna budućnost. Svi ovi progresivni pomaci nisu se desili slučajno, oni ne bi bili mogući da nije bilo lekcija koje smo morali naučiti u prošlosti. Trnovit put su morali proći barijatrijski hirurzi pun osporavanja i skepse da bi danas bili tu gdje jesu. Mijenjana je paradigma o liječenju pretilosti uz ogromne različite interese koji su bili u igri.

Rad donosi jezgrovite osvrte na mnogobrojne kirurške modalitete koji su se kroz istoriju koristili u liječenju patološke pretilosti. Takođe u radu donosimo uporedne podatke o sadašnjim i budućim trendovima kada je u pitanju hirurško liječenje patološke pretilosti uz originalne slike i iskustva Barijatrijskog tima Klinike za hirurgiju UKC Tuzla.

Patološka pretilost i maligne bolesti-uloga barijatrijske kirurgije

Prof. Dr Miroslav Bekavac Bešlin, Stomatološki fakultet Sveučilišta u Zagrebu, Medicinski fakultet Sveučilišta u Rijeci, Klinički bolnički centar Sestre milosrdnice u Zagrebu, odjel za gastroenterologiju i hepatobilijarno-pankreatičnu kirurgiju.

Preko 1000 epidemioloških studija Internacionalne agencije za istraživanje karcinoma IARC, odjela Svjetske zdravstvene organizacije daju jake dokaze da je 14 oblika karcinoma vezano sa debljinom. Spomenimo neke od mehanizama koji povezuju bolesnu debljinu i karcinom. Kronična upala slabijeg intenziteta s vremenom dovodi do promjene DNA koje vode nastanku karcinoma. Razlike između patološki pretilih i mršavih pojedinaca leže u tome što su pretili izloženiji stanjima i poremećajima koja uzrokuju kroničnu upalu i postaju faktor rizika za nastanak karcinoma / gastroezofagealni refluks i Barrettov jednjak, žučni kamenci, hepatitis, ulcerozni kolitis/. Masno tkivo producira veliku količinu estrogena. Estrogeni kod pretilih žena potiču veću staničnu proliferaciju i genetički instabilitet. Visoke vrijednosti estrogena mogu biti odgovorne za nastanak karcinoma. Hipoteza o vezi bolesne debljine i karcinoma kroz smanjenu osjetljivost na inzulin, odnosno inzulinsku rezistenciju je sve prisutnija. Visoke vrijednosti inzulina i IGF-1 prethode nastanku Tip 2DM a mogu dovesti i do pojedinih oblika karcinoma/kolon, bubreg, endometrijalni karcinom/. Inzulin sam po sebi ne inducira stanične mutacije, samo suprafiziološke koncentracije inzulina daju mitogeni efekat. Povezanost bolesti debljine s rizikom nastanka karcinoma možemo sumirati kroz utjecaj:

1. Antropometrijskih parametara (BMI, debljanje, povećanje visceralne masti)
2. Životnih navika (sjedilački način života, dijetne navike ili pogreške)

Što u konačnici generira:

3. Biološke mehanizme (hiperinzulinemija i inzulinska rezistencija, aktivacija IGF-a, promjene seksualnih hormona, upale slabijeg intenziteta u masnim stanicama, promjene u produkciji adipokina i VGF-a (Vascular growth factor), oksidativni stres, endokrine disrupcije i promjene imunih funkcija.

Karcinomi vezani za bolest debljine čine ukupno 6% od svih karcinoma i donose smrt za 15-20% os svih smrti uzrokovanih karcinomskom bolešću u USA. Barijatrijska kirurgija smanjuje upalne markere, smanjuje genomske promjene, potiče antineoplastični odgovor i time utječe na smanjenje broja karcinoma vezanih uz debljinu. Nakon barijatrijskog zahvata smanjuje se ili nestaje komorbiditet vezan s bolešću debljine a tako i rizični faktori za nastanak karcinoma. Barijatrijska kirurgija daleko više od planiranog, konzervativnog mršavljenja dugoročno smanjuje tjelesnu težinu.

Smatramo da je od velike važnosti prenijeti informacije o povezanosti debljine i karcinoma, kolegama liječnicima, javnosti i svima kjoji su uključeni u brigu za zdravlje naroda.

ABSTRACTS OF LECTURES

Type 2 Diabetes and Obesity

Academician Prof. Nebojša M. Lalić, MD, PhD - Dean of the Faculty of Medicine in Belgrade, Director of the Clinic for Endocrinology, Diabetes and Metabolism Diseases of the Clinical Center of Serbia, Member of the Serbian Academy of Sciences and Arts (SANU) in Belgrade.

Numerous studies from various countries in the last decades have indicated a simultaneous increase in obesity prevalence and type 2 diabetes (T2D) suggesting that these two conditions are closely related. Visceral adipose tissue has a dominant role in the pathogenetic connection of obesity and occurrence of T2D characterized by hypertrophic adipocytes, inflammation, insulin-induced signalling disorders, and insulin resistance. The result of these disorders is the increased secretion of free fatty acids with consequent ectopic fat depositions in muscle tissue and liver causing insulin resistance, and pancreatic beta cells with subsequent defects in insulin secretion. Recent studies have indicated that proinflammatory cytokines (tumor necrosis factor, TNF, interleukin 6, IL-6), disturbed fatty acid metabolism, mitochondrial dysfunction and endoplasmic reticulum disorders have a significant pathogenetic role in this process. On the other hand, adipocytes secrete numerous adipokines having pro-hyperglycemic effects (resistin, retinol binding protein 4, TNF, IL-6) and anti-hyperglycaemic effects (leptin, adiponectin, visceralin, omentin), so that disrupted mutual relationship of the said adipokines in obesity is one of the main mechanisms causing diabetes occurrence, primarily through molecular and metabolic abnormalities in the performance of insulin (at the level of muscle, liver and adipose tissue) as well as insulin secretion defects. Adipokines achieve interaction between adipose tissue and beta cells in pancreatic islets making so called adipoinsular axis that can contribute to the depletion of beta cells and the development of the manifesting T2D. On the other hand, antidiabetic adipokine, adiponectin, is considered a potential marker for the identification of obese persons with dysfunctional adipose tissue that can achieve the best effect in T2D prevention. More detailed knowledge of these complex mechanisms of the connection between obesity and diabetes has led to further testing in the direction of prevention of T2D occurrence. In this regard,

it has been shown that a non-medical treatment (diet and physical activity) with the aim of obesity reduction have a significantly better effect on T2D prevention than the existing medical treatment.

Obesity Treatment in Patients with Diabetes

Academician Prof. Dragan Micić, MD, PhD - Specialist of Internal Medicine, Subspecialist - Endocrinologist, Vice-Dean at the Faculty of Medicine in Belgrade, Member of the Serbian Academy of Sciences and Arts (SANU) in Belgrade.

Obesity contributes to the development of type 2 diabetes and worsening of its control. Body weight loss is a key goal in therapy for all type 2 diabetes patients who are overweight or are obese. Long-term results of metformin administration in the Diabetes Prevention Program have shown that metformin administration may result in sustained body weight loss. The mechanism of action of metformin on body weight loss is based on the reduction in food consumption, and therefore, metformin is considered to be the first therapeutic agent in obese patients with diabetes. Therapy with SGLT-2 inhibitors may also lead to a reduction in body weight of 3 to 5 kg in obese patients with type 2 diabetes. Specific therapy with medications used for obesity reduction may lead to obesity correction and metabolic control improvement in type 2 diabetes patients. Orlistat is the only medication for obesity acting outside the central nervous system, leading to a reduction of fat absorption in the digestive tract by 30%. Fentermin is a second agent that can be prescribed for a maximum of three months and its mechanism is based on reducing the perception of hunger. The combination of phentermine and topiramate with prolonged action was introduced in 2012 and the mechanism of action of this combination is based on the regulation of various brain neurotransmitters. Lorkaserin was approved for treating obesity in 2012 and acts as an appetite suppressor. The combination of bupropion and naltrexone with prolonged action was approved for therapeutic use in 2014.

Liraglutide is a glucagon-like peptide-1 receptor agonist and acts through reducing appetite and slowing gastric emptying. Liraglutide therapy in obese diabetics with increased cardiovascular risk factors results in a significant reduction in cardiovascular events. Semaglutide is the second GLP-1 agonist which leads to reduction in body weight and complications caused by obesity.

If the patient does not lose 5% or more of his body weight in three months after being prescribed a medicine, the therapy should be discontinued and should be replaced with another type of therapy. If medical therapy does not achieve the desired aim, metabolic surgery should be considered.

Diabetes, Obesity and Depression are a Vicious Circle

Prof. Snježana Popović-Pejičić, MD, PhD - Specialist of Internal Medicine, Subspecialist of Endocrinology, University Clinical Centre of the Republic of Srpska, Internal Medicine Clinic, Department of Endocrinology.

Diabetes, depression and obesity are a complex health problem. In the meta-analysis of recent longitudinal studies, the bidirectional correlation between depression and obesity has been shown. Depression leads to obesity by prolonging activation of the hypothalamic–pituitary–adrenal axis (HPA), but other mechanisms, such as the effect of serotonin levels, play an important role in inter-reactions of brain functions, endocrinological and immune systems, as well. Inadequate level of serotonin leads to mental disorders such as depression, sleep disorder, or to a permanent increase in appetite due to "insufficient prize syndrome", which aims to compensate for its disadvantage. The consequence is obesity occurrence which is followed by immune activation due to the reaction of adipocytokine. Obesity is a risk factor for diabetes occurrence, and may also have its own psychological consequences. Depression itself has a direct physiological effect on the development of diabetes, because insulin resistance was found to be more frequent with depressed people. On the other hand, alteration of the HPA axis leads to an increased release of cortisol and other counterregulatory hormones, increased immune-inflammatory activation and a change in function of the glucose transporter. Inflammation associated with diabetes presents a risk for occurrence of depression and metabolic disorders themselves, as increased rates of hypo and hyperglycemia play a role in the development of depression. Comorbidity of depression and obesity make the course of diabetes worsen because they both have a risk of developing vascular diseases. Early identification and treatment of depression is important because both improved glucose tolerance and prevention of complications of the disease can be achieved. During the treatment of depression in patients with

diabetes, it is necessary to take into account possible provoking metabolic syndrome and gaining weight.

Obesity Outpatient Clinic - how to organize it so that the results in obesity treatment are as good as possible

Assistant Prof. Snežana Polovina, MD, PhD - Specialist of Internal Medicine, Subspecialist of Endocrinology, Head of Outpatient Clinic of Multidisciplinary Center for Obesity Treatment at the Clinical Center of Serbia.

The treatment of an obese patient must be based on clinical practice guidelines and on interventions whose quality is scientifically proven. Obesity treatment has broader aims than weight reduction, which involve treating obesity complications and reducing the risk of complications and improving health. In all Collaborating Centers for Obesity Management (COMs), patients are treated in the same way, based on consensus-based protocols. Each country may adapt the treatment protocol to its own conditions, but without significant deviations from the European Guidelines for the Treatment of Obesity and Bariatric Operations. If the Obesity Care Center is to become a part of EASO-COMs, it is to meet certain criteria relating to equipment, space, patients and health staff trained to work with obese patients.

At the Obesity Care Center, it is necessary to examine at least 100 new obese patients with a body mass index of $> 40 \text{ kg/m}^2$, with complex obesity and obesity with rare diseases.

All staff in the Obesity Care Center must be trained to work with obese patients and conduct clinical research with this category of patients. It is also the duty of the employees in the Center to improve their knowledge and skills at specialized courses for permanent medical education for the treatment of obesity. The choice of patients, surgical techniques and monitoring patients should be conducted in accordance with the EASO/IFSO criteria. The decision to offer a patient surgical treatment as a therapeutic option is made by a competent multidisciplinary consilium consisting of an endocrinologist, a surgeon, a dietologist/dietician and an anesthesiologist. If necessary, other specialists may also be members of the consilium.

A paradox of obesity - can a proper diet be a medication?

Prof. Dr Midhat Jašić, PhD, Professor the Faculty of Technology and Pharmacy in Tuza, Editor-in-Chief Journal Food in health and disease.

Nutrition is a significant factor that affects obesity. Besides the diet, life habits, customs, stress, physical activity, age, gender and others influence obesity. The problem of obesity is complicated by its neuro-behavioural nature with genetic background, together with the disorder of homeostasis of metabolism energy. Changes in lifestyle habits, followed by technological progress of the society, have a significant influence on the occurrence of obesity. So far, it has been tried to reduce and prevent the occurrence of obesity with various measures. But over the last decades the obesity pandemic has been neither slowed down nor stopped, due to the complex causes.

A well-balanced diet is considered to be a good way to prevent obesity pandemic. It is based on the fact that while reducing body weight, it is necessary to reduce calorie consumption of food, and after achieving that, a balance in diet and habits should be maintained.

Increasing body weight is often determined by a variety of physiological, psychological, sociological and other mechanisms that affect the appearance of hunger. In recent years, efforts have been made to highlight hunger and satiety scientifically by studying the effects of hormones on their occurrence. Nowadays, different diets are often used that are not scientifically justified. Such diets become obsession, which often turns into orthorexia.

Obesity treatment recommends an integrative approach and scientifically based methods. Proper, balanced diet, along with healthy lifestyle are undoubtedly significant in the prevention and treatment of obesity.

Psychological Problems of Obese Patients

Prof. Veljko Đorđević, MD, PhD, Specialist Psychiatrist, Professor at the Department of Psychiatry and Psychology, Faculty of Medicine, University of Zagreb; President of Zagreb's Institute for the Culture of Health.

Modern knowledge indicate that obesity is a chronic medical disorder that arises as a result of very complex interactions among genetic, neuroendocrinological, psychological, behavioral, and environmental factors. Therefore, interdisciplinary and multimodal approach is needed in the treatment of obesity, along with a very important role of a psychiatrist and a psychologist. Obesity is often "common outcome" of the various emotional problems that an individual faces and does not know how to solve them. Likewise, body weight loss and, in particular, the maintaining of achieved body weight, is a very difficult process for a large number of people, which requires a good and professional psychological support. Although a significant number of obese persons do not manifest mental disorder or psychological factors were not the leading cause of obesity, mental health professionals play an important role in the psychological evaluation of patients starting with weight loss programmes, in assessing psychological symptoms that may occur during the weight loss process, in psychological assessment of highly obese patients, before and after bariatric surgery, as well as in the application of various psychotherapeutic, pharmacotherapeutic and sociotherapy treatment. It is always desirable to know the family situation and to conduct, if possible, family interventions. In 1985, the School of Weight Loss in today's Sisters of Charity University Hospital iz Zagreb was founded, which developed an eclectic psychotherapeutic approach and in which a psychiatrist, a psychologist and a nurse participated as therapists. Clinical experience through the work of the school showed that the causes of obesity are often chronic stress, anxiety, depression, and unhealthy eating habits from the earliest age. It was also observed that certain psychopharmaceuticals are a significant cause of obesity in people with mental illnesses. Considering the significant achievements of such groups in terms of reduction and maintenance of achieved body weight, this model has been recognized in Croatia, and even internationally, and has been implemented until today.

Endoscopic Treatment of Obesity

Prof. Milenko Bevanda, MD, PhD - Specialist of Internal Medicine, Subspecialist - Gastroenterologist, Dean of the Faculty of Medicine in Mostar, Head of the Department of Gastroenterology of the Clinic for Internal Diseases of University Clinical Hospital Mostar, President of the Association of Gastroenterologists and Hepatologists in Bosnia and Herzegovina.

The bioenteric intragastric balloon (BIB) was placed in for the first time in 1999. It is made from silicone and filled with saline. It is usually filled with a volume of 450-700 ml. It is placed in and removed using endoscopy. It works on the principle that satiety is associated with the volume of food in the stomach and with its distention. Cholecystokinin (CCK) is an important regulatory hormone that regulates the sense of satiety and its secretion is conditioned by gastric distension. Ghrelin and leptin can play a similar role. Mechanical distension of the stomach with a balloon volume greater than 400 cc during meals significantly reduces the need for food intake.

Indications for placement of an intragastric balloon (IGB) are found in patients with a body mass index (BMI) between 28 and 40 who could not achieve long-term weight loss with a traditional regimen and in patients with BMI greater than 55 before bariatric procedures in order to lessen the risk associated with extensive loss of body mass and in testing of a patient's decision and the desire to change eating habits before the implantation of gastric ring, and in patients with eating disorder, especially those with excessive consumption of sweets or so called "binge eaters", with episodes of over-consumption which can "fool" balloon by a selection and food preparation. Contraindications for the placement are early abdominal surgery or bariatric surgery, large hiatal hernia, severe grade of esophagitis, peptic ulcer and inadequate compliance.

Pre-procedural evaluation includes medical history (including previous attempts to lose weight), physical examination, screening for obesity-related diseases, and determination to change lifestyle. A patient should be assessed for a nutritional status which includes diet analysis, eating patterns and education on postoperative diet. Laboratory tests that need to be done before the procedure are: complete blood count, glycemic status, lipidogram, kidney function, liver profile, urine, INR, thyroid hormone status, vitamin D, iron, B12 and folic acid.

The balloon is placed using a direct endoscopic visualization and without the use of fluoroscopy. After the placement is completed, the insertion catheter is separated and is removed together with the endoscope.

Postprocedural diet is very important. On the day of placement, it is allowed to drink small amounts of tea or water. If having no nausea, it is allowed to drink tea and to eat mashed food on the first and second day. The third day starts with light food. Medications that can be used are: proton pump inhibitors (IPP), antiemetics, dimenhydrinate and NO metoclopramide.

The balloon is removed under direct endoscopic visualization. Its content is punctured and drained and then removed with a snare or grasper.

Complications after placing the balloon are balloon intolerance (resulting in early removal), gastric ulcer, gastric erosion, oesophagitis, spontaneous deflation, persistent vomiting, gastroesophageal reflux and abdominal pain. There are reports of severe gastrointestinal perforations, small bowel obstruction and significant gastric dilatation.

Post IGB placement follow-up involves monitoring the percentage of body weight loss (% TBWL) and a percentage of excessive weight loss (% EWL). The acceptable safety levels and efficacy of IGB is the threshold for "primary" obesity of 25% EWL measured after 12 months, while the acceptable threshold for serious side effects is 5% or less.

Although IGB has shown efficacy in large number of patients, several studies have shown that successes were short-term and that some patients gained weight again after the balloon was removed. The reason is probably that there was no change in lifestyle.

We can conclude that treatment with IGB is more than transient therapeutic curiosity in gastroenterology. This is the best therapeutic option for patients who do not respond to a conservative treatment of obesity treatment, who are not candidates for a surgical procedure or do not want to go on a surgical procedure immediately. Re-gaining weight after removal of the balloon remains an issue. Promising results appear in reference to improving the quality of life and improving general health in obese patients. This is a minimally invasive method for obesity treatment and similar conditions that will surely have a role in the treatment over a long period of time.

Bariatric Surgery - yesterday, today, tomorrow ...

Prof. Fuad Pašić, MD, PhD - Specialist-General Surgeon, Subspecialist - Abdominal Surgeon, Head of General Abdominal Surgery Department of the University Clinical Centre Tuzla, President of "Obesity Society" Association in Bosnia and Herzegovina.

Prof. Siniša Maksimović, MD, PhD, - Specialist General Surgeon, director of Public health institution hospital „Sveti Vračevi“ in Bijeljina, Faculty of Medicine University of Banja Luka.

Obesity is one of the fastest growing pandemics of the modern age. Negative global social effects related to this widespread disease have been only lately critically, objectively and

multidimensionally seen. Although bariatric surgery has been performed for the past 60 years, it has only been positioned in the past few years in a place that belongs to it objectively. Very few surgical branches can be praised for such a meteoric success as it is the success achieved in bariatric surgery in the last two decades. Obesity surgery, or the metabolic aspects of this branch of surgery, is subject to new researches and we can say that an interesting future in this area is waiting for us. All of these progressive steps have not happened by accident; they would not have been possible without lessons we had to learn in the past. Bariatric surgeons had to pass hard way full of controversy and scepticism in order to be here nowadays. The paradigm of obesity treatment has changed, with a huge variety of interests present here. The paper brings the core points of view on the many surgical modalities that have been used throughout the history in the treatment of pathological obesity. Also, we provide comparative data on current and future trends when it comes to surgical treatment of pathological obesity with true images and experiences of the Barriatic team of the Clinic for Surgery University Clinical Centre Tuzla.

Pathological Obesity and Malignant Diseases – Role of Bariatric Surgery

Prof. Miroslav Bekavac Bešlin, MD, PhD – Dental faculty University of Zagreb, Faculty of Medicine University of Rijeka, Sisters of Charity University Hospital in Zagreb, Department for Gastroenterology and Hepatobiliary and Pancreatic Surgery.

Over 1,000 epidemiological studies by the International Agency for Research on Cancer, (IARC), the Department of World Health Organization have shown strong evidence that 14 forms of carcinoma are related to obesity. Some of the mechanisms that connect obesity and carcinoma shall be mentioned here. Chronic inflammation of lower intensity over some period of time may result in change in DNA which leads to the occurrence of carcinoma. The differences between pathologically obese and thin persons lie in the fact that obese persons are more exposed to conditions and disorders caused by chronic inflammation and become a risk factor for the occurrence of carcinoma (gastroesophageal reflux and Barrett's esophagus, gallstones, hepatitis, ulcerative colitis). Adipose tissue produce a large amount of estrogen. Estrogens in obese women will lead to increased cell proliferation and genetic instability. High estrogen levels may be responsible for the development of carcinoma. The hypothesis on the correlation between

obesity and carcinoma through reduced insulin sensitivity or insulin resistance is increasingly present. High insulin levels and IGF-1 precede the occurrence of type 2DM and may also lead to occurrence of certain forms of carcinoma (colon, kidney, endometrial carcinoma). Insulin does not itself induce cell mutations; only supraphysiological concentrations of insulin give a mitogenic effect. We can summarize the correlation of obesity with the risk of carcinoma occurrence through the impact of:

1. Anthropometric parameters (BMI, weight gain, visceral fat increase)
2. Life habits (sitting habits, diet habits/mistakes)

Which ultimately generates:

3. Biological mechanisms (hyperinsulinemia and insulin resistance, IGF activation, changes in sexual hormones, lower grade inflammation of adipose tissue, changes in adipokine production and VGF (Vascular growth factor), oxidative stress, endocrine disruptors and changes in immune functions.

Carcinomas related to obesity make a total of 6% of all carcinomas and cause death to 15-20% of all deaths caused by carcinomas in the United States. Bariatric surgery reduces inflammatory markers, reduces genomic mutation, stimulates anti-neoplastic response and thereby affects reduction in the number of carcinomas related to obesity. After bariatric surgery, comorbidity associated with obesity and risk factors for the development of carcinoma is reduced or disappeared. Bariatric surgery reduces body weight in the long term far more than planned conservative weight loss.

We believe that it is of great importance to transfer information on correlation between obesity and carcinoma to our colleagues, doctors, to the public and all those involved in the national health care.

BIOGRAFIJE PREDAVAČA

Akademik Prof. Dr Nebojša M. Lalić

Specijalista interne medicine, subspecijalista endokrinologije, dekan Medicinskog fakulteta u Beogradu, direktor klinike za endokrinologiju, dijabetes i bolesti metabolizma Kliničkog centra Srbije, član srpska akademija nauka i umetnosti (SANU) u Beogradu.

U okviru naučnog rada usavršavao se u Joslin Diabetes Centru u Bostonu, SAD, autor je ili član autorskog tima u više od 700 publikacija, najvećim delom iz oblasti proučavanja dijabetesa, član uređivačkih odbora i recenzent u više internacionalnih časopisa, rukovodilac više naučnih projekata, član brojnih domaćih i međunarodnih profesionalnih udruženja i Fellow of Royal College of Physicians. Član je izvršnog odbora IDF Europe. Održao je više od 50 predavanja po pozivu na međunarodnim skupovima. Predsednik je Republičke stručne komisije za dijabetes i urednik nacionalnih vodiča za dijabetes i za prevenciju tipa 2 dijabetesa.

Akademik Prof. Dr Dragan Micić

Specijalista interne medicine, subspecijalista endokrinolog, profesor Medicinskog fakulteta Univerziteta u Beogradu, prodekan na Medicinskom fakultetu u Beogradu, redovni član Srpske akademije nauka i umetnosti od 05.11. 2009. godine, inostrani član Akademije nauka i umjetnosti Republike Srpske od 23.05.2013. godine, član Akademije medicinskih nauka od 1996. godine.

Dragan Micić je rođen 13. januara 1950. godine u Beogradu. Gimnaziju završava u Kragujevcu kao maturant generacije i dobitnik Vukove diplome, a Medicinski fakultet u Beogradu 22. januara 1974. godine sa prosečnom ocenom 9,68. Zvanje magistra nauka stekao je 26. decembra.1977. Zvanje doktora nauka na Medicinskom fakultetu u Beogradu stekao je 25. februara 1981. Godine. Specijalizaciju Interne medicine završio je na Medicinskom fakulteta u Beogradu. 1981. godine. Subspecijalista endokrinologije od 1983. godine. U zvanje Docenta na predmetu Interna medicina izabran 07.12.1988., u zvanje Vanrednog profesora 07.10.1991. a u zvanje Redovnog profesora Interne medicine na Medicinskom fakultetu Univerziteta u Beogradu 05.11.1996. godine.

Objavio je do sada 158 radova u međunarodnim časopisima i monografijama, 137 radova u domaćim časopisima, 95 poglavlja u domaćim monografijama; 511 sažetaka na međunarodnim sastancima; 243 sažetaka na domaćim sastancima i 37 poglavlja u domaćim zbornicima. Akademik Dragan Micić održao je do sada 160 predavanja po pozivu. Član je Srpskog lekarskog društva, član Endokrinološke sekcije i predsednik odbora za gojaznost Endokrinološke sekcije Srpskog lekarskog društva. Predsednik je Srpskog udruženja za borbu protiv gojaznosti. Član je brojnih međunarodnih udruženja.

Prof. Dr Snježana Popović-Pejičić

Specijalista interne medicine, subspecijalista endokrinologije, primarijus, redovni profesor i šef Katedre za internu medicinu, Medicinskog fakulteta, Univerziteta u Banjoj Luci

Rođena u Banjoj Luci 1956 god. Medicinski fakultet Univerziteta u Sarajevu završila je 1980 godine. Specijalizirala je Internu medicinu na Medicinskom fakultetu Univerziteta u Zagrebu, gdje je završila i postdiplomski studij iz Kliničke endokrinologije.

U okviru svog naučnog i stručnog radapokazala je posebno interesovanje za oblast dijabetologije, sa fokusom na proučavanje dijabetesne kardiovaskularne autonomne neuropatije, kaoi za oblast gojaznosti, osteoporoze i bolestima štitaste žlijezde. Usavršavala se u Beču, Kopenhagenu, Pragu, Budimpešti, Berlinu i Atini. U okviru naučno-stručne djelatnosti objavila je kao autor i koautor 15 publikacija .

Autor je ili član autorskog tima u 167 naučnih radova objavljenih u časopisima međunarodnog i nacionalnog značaja i zbornicima nacionalnih i međunarodnih dijabetoloških i endokrinoloških naučnih skupova .

Aktivno je učestvovala u radu više od 100 međunarodnih kongresa i održala 45 predavanja po pozivu na međunarodnim i nacionalnim naučnim skupovima. Učestvovala je u izradi 12 međunarodnih i nacionalnih projekata, kao rukovodilac ili saradnik na projektu i 5 kliničkih studija kao glavni istraživač.

Osnivač je i predsjednik Udruženja endokrinologa i dijabetologa Republike Srpske od 2006 godine. U toku svog dugogodišnjeg naučno-istraživačkog i stručnog rada dobila je brojna priznanja i nagrade.

Doc. dr Snežana Polovina

Specijalista interne medicine, subspecijalista endokrinologije, rukovodilac ambulante Multidisciplinarnog centra za gojaznost Kliničkog centra Srbije.

Magistrirala je na temu: "Prevenција insulin nezavisnog dijabetesa kod gojaznih osoba primenom modifikovane dijeta" i doktorirala je na temu: "Rizik od preloma kostiju kod osoba sa subkliničkim poremećajem funkcije štitaste žlezde" na Medicinskom fakultetu Univerziteta u Beogradu gde je 2015. stekla naučno zvanje "Naučni saradnik".

Ima 30 godina radnog iskustva, od 2011. vodi ambulantu Multidisciplinarnog centra za gojaznost Kliničkog centra Srbije. Od 2015. je član radne grupe za ishranu, Evropskog udruženja za proučavanje gojaznosti (Nutrition Working Group, European Association for the Study of Obesity).

Autor je i koautor u 138 stručnih i naučnih radova od kojih su 29 objavljena u celini. Urednik je i autor 8 poglavlja u udžbeniku za posle diplomsku nastavu "Hirurško lečenje gojaznosti-od barijatrijske do metaboličke hirurgije" čiji je izdavač Medicinski fakultet, Univerziteta u Beogradu. Održala je 29 predavanja po pozivu na kongresima u Srbiji i inostranstvu. Docent je na Farmaceutskom fakultetu u Novom Sadu, na predmetu Klinička endokrinologija na katedri za biohemijske nauke. Govori engleski jezik.

Prof. Dr Midhat Jašić

Profesor na tehnološkom i farmaceutskom fakultetu u Tuzli. Glavni i odgovorni urednik časopisa Hrana u zdravlju i bolesti.

Prof. Dr Midhat Jašić, redovni profesor iz područja nutricionizma na Tehnološkom i Farmaceutskom fakultetu Univerziteta u Tuzli. Objavio je više od 20 knjiga, 120 stručnih i znanstvenih radova i jedan patent iz područja prehrane. Dugi niz godina je glavni i odgovorni urednik tri periodike: časopisa za nutricionizam i dijetetiku "Hrana u zdravlju i bolesti"– (<https://hrcak.srce.hr/hrana-u-zdravlju-i-bolesti>), Zbornika radova "Hranom do zdravlja" (http://www.ptfos.unios.hr/Hranom_Do_Zdravlja/) i "Zbornika radova kongresa o pčelarstvu i pčelinjim proizvodima" (<http://www.hranomdozdravlja.com/?do=pcele>). Urednik web stranice: www.hranomdozdravlja.com

Prof. Dr Veljko Đorđević

Profesor na katedri za psihijatriju i psihološku medicinu Medicinskog fakulteta Sveučilišta u Zagrebu, predsjednik zagrebačkog instituta za kulturu zdravlja.

Veljko Đorđević je izvanredni profesor na Medicinskom fakultetu Sveučilišta u Zagrebu. Osnovnu školu i gimnaziju završio je u Osijeku, a 1975. studij medicine u Zagrebu. 1981. završava specijalizaciju iz psihijatrije, a 2005. užu specijalizaciju iz socijalne psihijatrije.

Završio je niz poslijediplomskih studija, treninga i tečajeva (biomedicina i zdravstvo – poslijediplomski studij, Akupunktura, Opća teorija sustava, Hipnoterapija – treninzi), edukacije iz Transakcijske analize, Transakcijske analize ponašanja, Psihoterapije. te niz međunarodnih tečajeva.

Kao specijalist psihijatar radi u Kliničkom bolničkom centru „Sestre milosrdnice“ do 1992., a od 2002. radi kao pomoćnik ravnatelja na KBC-u Zagreb, pa kao pročelnik Zavoda za preventivnu i socijalnu psihijatriju Klinike za psihijatriju KBC-a Zagreb, a danas kao pročelnik Poliklinike Klinike za psihološku medicinu KBC-a Zagreb.

Osnivač je i predstojnik je Centra za palijativnu medicinu, medicinsku etiku i komunikacijske vještine Medicinskog fakulteta Sveučilišta u Zagrebu, predsjednik Zagrebačkog instituta za kulturu zdravlja te predsjednik Upravnog odbora Zagrebačke zaklade za pomoć osobama oboljelim od cerebralnovaskularnih bolesti.

Urednik je i voditelj radio emisije „Čovjek je čovjeku lijek“, Narodni i Obiteljski radio – zdravstveno popularna kontakt tjedna emisija iz područja mentalnog zdravlja i zdravlja općenito, te urednik i voditelj TV-emisije „Povjerljivo s dr. Veljkom Đorđevićem“ na programu Z1, zdravstveno popularna kontakt tjedna emisija iz područja mentalnog zdravlja (od 1984.g. je bio voditelj preko 1000 radijskih emisija).

Član je mnogih hrvatskih i međunarodnih društava, bio je urednik nekoliko stručnih i znanstvenih časopisa te dobitnik mnogih priznanja.

Prof. Dr Milenko Bevanda

Specijalista interne medicine, subspecijalista gastroenterolog, dekan Medicinskog fakulteta u Mostaru, voditelj odjela za gastroenterologiju klinike za unutarnje bolesti KBC Mostar, predsjednik Asocijacije gastroenterologa i hepatologa u BiH.

Rođen 22. srpnja 1958. godine. Pučku školu završio u Žepču, a gimnazijsko obrazovanje u Ljubuškom. Studij medicine upisao i okončao u Sarajevu 1984. godine.

Do 1991. godine radio je u Domu zdravlja Čitluk kao liječnik opće medicine. Od studenoga 1993. započinje specijalizaciju iz interne medicine za potrebe KB Mostar koju završava u Zagrebu u travnju 1998. godine. Edukaciju iz endoskopije završio u KB Firule u Splitu 1994. godine.

Poslijediplomski studij iz UZV u kliničkoj medicini-smjer gastroenterologija i nefrologija upisao u akademskoj godini 1996/1997. na Medicinskom fakultetu Sveučilišta u Zagrebu. Naslov primarijus dobio 1999. godine. Magistrirao u Zagrebu 31. siječnja 2004. godine s temom „Endosonografija, manometrija i EMG u evaluaciji morfologije i funkcije analnih sfinktera u bolesnika s kroničnom konstipacijom“.

Doktorira u Mostaru 6. listopada 2006. godine s temom „Učinak hipertermičke kemoimunoterapije na karcinomatozu peritoneuma u miševa“.

U srpnju 2007. izabran sam za znanstveno-nastavno zvanje docenta za područje medicine, polje Kliničke medicinske znanosti, grana Interna medicina

Užu specijalizaciju iz gastroenterologije završio u lipnju 2005. godine u Zagrebu.

U tijeku 1997 i 1998 god obašao sam ulogu pomoćnika ministra za zdravstvo, sektor za stručno-medicinske poslove HNŽ/ Kantona.

Od rujna 2007. g. obnaša dužnost pročelnika katedre Interne medicine I. Od rujna 2009 god do rujna 2011 godine bio sam pročelnik katedre za Internu propedeutiku. Od 17. rujna 2011 ponovno sam izabran za pročelnika katedre za internu medicinu).

Od 5 mjeseca 2011 godine sam predsjednik udruženja gastroenterologa i hepatologa BiH. Dekan Medicinskog fakulteta od 1.10.2013 godine. Objavio preko 50 radova, bio učesnik u 13 projekata, 29 puta imao status pozvanog predavača, autor i koautor u 4 knjige.

Prof. Dr Fuad Pašić

Specijalista opšti hirurg, subspecijalista abdominalni hirurg, šef odjela opšte abdominalne hirurgije UKC Tuzla, predsjednik Udruženja „Društvo za debljinu“ u BiH.

Pašić Fuad je rođen u Tuzli 1964 god. Osnovnu i srednju školu je završio u Tuzli. U Tuzli je završio i Medicinski fakultet. Od 1991 godine zaposlen na UKC Tuzla. Na Klinici za hirurgiju

UKC Tuzla radi od 1992 godine. U toku rada na Klinici za hirurgiju UKC Tuzla prošao sve faze u edukacionim programima od volontera do ljekara subspecijaliste. Dr Pašić je specijalizirao Opštu hirurgiju 1999 godine. Završio je postdiplomski studij na Medicinskom fakultetu u Tuzli gdje je stekao diplomu magistra medicinskih nauka 2005 godine. Završava doktorski studij na Medicinskom fakultetu u Tuzli 2010 godine i postaje doktor medicinskih nauka. Angažovan je bio u svojstvu asistenta i višeg asistenta na Katedri za hirurgiju Medicinskog fakulteta. Od 2011 godine postaje docent na Katedri za hirurgiju Medicinskog fakulteta u Tuzli. Od 2013 godine postavljen za šefa Odjela Opšte abdominalne hirurgije UKC Tuzla. Od 2013 godine postaje subspacijalista abdominalni hirurg. Bio je na mnogobrojnim usavršavanjima u zemlji i inostranstvu. Prošao je napredne edukacije iz oblasti laparoskopske hirurgije želuca, kolona i hernije u Italiji, Francuskoj i Hrvatskoj . Postavljen za kordinatora projekta razvoja Barijatrijske hirurgije i učestvovao sa menadžmentom UKC Tuzla u formiranju multidisciplinarnog tima za liječenje patološke gojaznosti koji je formiran u 12-om mjesecu 2010 godine. Dr. Pašić sa kolegama iz multidisciplinarnog tima za liječenje debljine formirao 2015 godine državno Udruženje“Društvo za debljinu“ u BiH koje svojim djelovanjem pokriva Federaciju BiH i Republiku Srpsku. Izabran je za predsjednika Udruženja na osnivačkoj skupini koja je održana u aprilu 2015 godine. Kao autor i koautor objavio je 25 naučnih radova. U zadnje četiri godine je bio iz oblasti barijatrijske hirurgije 12 puta pozvani predavač u Hrvatskoj, Srbiji, Crnoj Gori i u BiH. Kao autor i koautor objavio 3 knjige. Objavio knjigu „Barijatrijska kirurgija bolesti debljine“ Bešlin, Pašić i suradnici. Knjiga je katalogizirana 2017 god. u Nacionalnim knjižnicama Republike Hrvatske i Bosne i Hercegovine. Profesor Pašić je editor je u međunarodnom časopisu Endocrine, Oncology and Metabolismus. U zvanje vanrednog profesora na Katedri za hirurgiju Medicinskog fakulteta u Tuzli izabran je 2017 godine. Oženjen suprugom Amelom ima sina Omara.

Prof. Dr Miroslav Bekavac Bešlin

Stomatološki fakultet Sveučilišta u Zagrebu, Medicinski fakultet Sveučilišta u Rijeci, Klinički bolnički centar Sestre milosrdnice u Zagrebu, odjel za gastroenterologiju i hepatobilijarno-pankreatičnu kirurgiju.

Miroslav Bekavac-Bešlin, rođen 22.02.1952. u Zagrebu. Specijalizaciju iz opće kirurgije završava u Zagrebu u Kliničkoj bolnici Sestara Milosrdnica 1982. godine. Poslijediplomski studij iz opće kirurgije završava na Medicinskom fakultetu Sveučilišta u Zagrebu 1990 godine. 1993. godine izabran je za asistenta na Stomatološkom fakultetu Sveučilišta u Zagrebu iz predmeta Opća i ratna kirurgija, Doktorsku disertaciju je odbranio 1996. godine. Naziv primarijus stječe 1996. Zvanje docenta stječe 1997. Zvanje izvanrednog profesora stječe 2001. Redoviti je profesor Stomatološkog fakulteta Sveučilišta u Zagrebu od 2004. godine. Redoviti je profesor u trajnom zvanju od 2011/12. Radi u Kliničkoj bolnici Sestara Milosrdnica u Zagrebu, šef je Kliničkog odjela za gastroenterološku, hepatobilijarno- pankreatičnu kirurgiju i minimalno invazivnu kirurgiju. Od 1983. bavi se endoskopijom a od 1993/4. nakon uvođenja tehnike minimalne invazivne kirurgije u Kliničku bolnicu Sestara Milosrdnica uvodi čitav niz laparoskopskih i torakoskopskih zahvata u matičnoj klinici, drugim kliničkim odjelima i bolnicama. Nositelj je kolegija: Minimalna invazivna kirurgija u poslijediplomskoj nastavi na Stomatološkom fakultetu u Zagrebu.

Stručno usavršavanje provodi na klinikama i institutima u Hrvatskoj, Sloveniji, Njemačkoj, Francuskoj, Austriji, Izraelu, Švicarskoj, Italiji, Litvi, Argentini i SAD-u. Održao je predavanja na nacionalnim, europskim i svjetskim kongresima i simpozijima. Autor i koautor u nekoliko skripti, priručnika, udbenika i knjiga. Objavio je više od 100 radova u zemlji i inozemstvu od toga 20 u CC-u. Član je mnogobrojnih nacionalnih, evropskih i svjetskih kirurških društava. Izabran za redovitog člana Hrvatske akademije medicinskih znanosti 2004. godine. Od listopada 2017. godine prelazi u KBC Rijeka, Kliniku za kirurgiju. Cilj prelaska u KBC Rijeka je razvijanje kirurškog liječenja patološke pretilosti i pozicioniranje Rijeka kao vodećeg centra liječenja bolesti debljine u Hrvatskoj.

Prof. Dr Siniša Maksimović

Specijalista opšte hirurgije, direktor JZU bolnica "Sveti Vračevi" u Bijeljini, Medicinski fakultet Univerziteta u Banja Luci.

Rođen je 05. juna 1966. god. u Bijeljini. Osnovnu i srednju medicinsku školu završio je u Bijeljini. Medicinski fakultet završio je na Medicinskom fakultetu Univerziteta u Beogradu 01. februara 1993. god. Magistarsku tezu pod nazivom "Limfogene metastaze papilarnog karcinoma

štitaste žlezde i njihov značaj u pojavi recidiva bolesti” odbranio je 04. juna 1997.god. Specijalistički ispit iz opšte hirurgije sam položio 10. jula 1998. god. na Medicinskom fakultetu u Beogradu. Doktorsku disertaciju odbranio je na Medicinskom fakultetu Univerziteta u Beogradu 09. Maja 2003. god. pod nazivom „Prognostički faktori evolucije urgentno operisanih bolesnika sa karcinomom leve polovine kolona i rektuma“. Član je više domaćih, evropskih i svjetskih udruženja hirurga i onkoloških hirurga. Objavio je 209 naučnih radova iz oblasti onkološke hirurgije na domaćim, evropskim i svjetskim kongresima i naučnim časopisima. Autor je 3 monografije, koautor 1 recenziranog univerzitetskog udžbenika „Osnove kliničke onkologije sa radioterapijom“ u izdanju Medicinskog fakulteta u Banjoj Luci 2015. Koautor je 1 stručne knjige izdate od međunarodnog izdavača „Quality of life of patients after total laryngectomy“, Publisher: Lap Lambert Academic Publishing 2017. Izabran je u zvanje Vanrednog profesora na katedri hirurgije Medicinskog fakulteta Univerziteta u Banja Luci 01. 03. 2012. godine. Dobitnik je mnogobrojnih domaćih i međunarodnih priznanja. Zaposlen je u Javnoj zdravstvenoj ustanovi bolnica "Sveti Vračevi" u Bijeljini kao opšti hirurg, trenutno na poziciji direktora bolnice. Od novembra 2014. godine poslanik je u Narodnoj skupštini Republike Srpske. Oženjen otac dvoje djece.

LECTURERS' BIOGRAPHIES

Academician Prof. Nebojša M. Lalić, MD, PhD

Specialist of Internal Medicine, Subspecialist of Endocrinology, Dean of the Faculty of Medicine in Belgrade, Director of the Clinic for Endocrinology, Diabetes and Metabolism Diseases of the Clinical Center of Serbia, Member of the Serbian Academy of Sciences and Arts (SANU) in Belgrade.

Within the scope of his scientific work, he had additional training at the Joslin Diabetes Center in Boston, USA. He is an author or a co-author in more than 700 publications, mostly in the field of diabetes studies, a member of editorial boards and a reviewer in several international journals, a leader of several scientific projects, a member of numerous local and international professional associations and the Fellow of the Royal College of Physicians. He is a member of IDF Europe Executive Board. He has held more than 50 lectures by invitation at international meetings. He is the President of the Republic of Serbia Expert Commission for Diabetes and the Editor of the National Guidelines for Diabetes and for Prevention of Type 2 Diabetes.

Academician Prof. Dragan Micić, MD, PhD

Specialist of Internal Medicine, Subspecialist-Endocrinologist, Professor at the Faculty of Medicine, University of Belgrade, Vice-Dean at the Faculty of Medicine in Belgrade, Full Member of the Serbian Academy of Sciences and Arts since 5 November 2009, Foreign Member of the Academy of Sciences and Arts of the Republic of Srpska since 23 May 2013, Member of the Academy of Medical Sciences since 1996.

Dragan Micić was born on 13 January 1950 in Belgrade. He completed the Grammar School in Kragujevac as the best in his class and was awarded "Vuk Karadžić diploma", and then the Faculty of Medicine in Belgrade on 22 January 1974 with an average grade of 9.68. He was awarded the title of Master of Science on 26 December 1977. He was awarded the title of Doctor of Science at the Faculty of Medicine in Belgrade on 25 February 1981. He specialized in Internal medicine at the Faculty of Medicine in Belgrade in 1981. He has been a subspecialist of endocrinology since 1983. On 7 December 1988 he was elected an Assistant Professor of the

Internal Medicine, as an Associate Professor on 7 October 1991 and as a Full Professor of Internal Medicine at the Faculty of Medicine, University of Belgrade on 5 November 1996.

He has published 158 papers in international journals and monographs, 137 papers in domestic journals, 95 chapters at domestic monographs; 511 summaries at international meetings; 243 summaries at domestic meetings and 37 chapters in domestic conference proceedings. Academician Dragan Micić has held 160 lectures by invitation so far. He is a member of the Serbian Medical Society, a member of the Endocrinology Section and the Chairman of the Committee for Obesity of the Endocrinology Section of the Serbian Medical Society. He is the President of the Serbian Association for the Study of Obesity. He is a member of numerous international associations.

Prof. Snježana Popović-Pejičić, MD, PhD

Specialist of Internal Medicine, Subspecialist of Endocrinology, Primarius, Full Professor and Head of the Department of Internal Medicine at the Faculty of Medicine, University of Banja Luka.

She was born in 1956 in Banja Luka. She graduated from the Faculty of Medicine of the University of Sarajevo in 1980. She specialized in Internal Medicine at the Faculty of Medicine at the University of Zagreb, where she completed her postgraduate studies in Clinical Endocrinology.

Within her scientific and professional work, she showed particular interest in the field of diabetology, with a focus on the study of diabetes cardiovascular autonomic neuropathy, as well as with a focus on obesity, osteoporosis and thyroid diseases. She had additional training in Vienna, Copenhagen, Prague, Budapest, Berlin and Athens. In the field of scientific-professional activity she was the author and a co-author of 15 publications.

She is the author or a co-author of 167 scientific papers published in journals of international and national significance and in conference proceedings of national and international diabetic and endocrinological scientific meetings.

She actively participated in the work of more than 100 international congresses and held 45 lectures by invitation at international and national scientific conferences. She participated in the preparation of 12 international and national projects, as the Leader or a team member on the Projects and as the main researcher in 5 clinical studies.

She is the founder of the Association of Endocrinologists and Diabetologists of the Republic of Srpska and has been the President of it since 2006. During her long-term scientific and research work, she has received numerous awards and prizes.

Assistant Professor Snežana Polovina, MD, PhD

Specialist of Internal Medicine, Subspecialist of Endocrinology, Head of Outpatient Clinic of Multidisciplinary Center for Obesity Treatment at the Clinical Center of Serbia.

She was awarded her Master's degree entitled: "Prevention of Insulin-Independent Diabetes in Obese People Using Modified Diet" and was awarded a doctorate degree on the topic: "Bone Fracture Risk in People with a Sub-Clinical Disorder of the Thyroid Function" at the Faculty of Medicine, University of Belgrade, where in 2015 she was awarded a scientific title of "Scientific Associate".

She has 30 years of working experience, and since 2011 she has been conducting an Outpatient Clinic of the Multidisciplinary Center for Treatment of Obesity of the Clinical Center of Serbia. Since 2015, she has been a member of the Nutrition Working Group, European Association for the Study of Obesity.

She is also the author and a co-author of 138 professional and scientific papers, of which 29 were published in extenso. She is also the author of 8 chapters in the textbook for postgraduate studies "Surgical Treatment of Obesity - from Bariatric to Metabolic Surgery", published by the Faculty of Medicine, University of Belgrade. She has held 29 lectures by invitation at congresses both in Serbia and abroad.

She is an Assistant Professor at the Faculty of Pharmacy in Novi Sad, Clinical Endocrinology Course, at the Department of Biochemical Sciences.

She speaks English.

Prof. Dr Midhat Jašić, PhD

Professor the Faculty of Technology and Pharmacy in Tuza, Editor-in-Chief Journal Food in health and disease.

PhD Midhat Jasic, full professor in the field of nutrition and food technology. Keep lectures in field of nutrition and food technology. Published more than 20 books, 120 experts and scientific papers. He is many years chief editor three periodicals of „Food in health and disease“ - jurnal

for nutrition and dietetic (<https://hrcak.srce.hr/hrana-u-zdravlju-i-bolesti>), Proceedings of „Food for health“ (http://www.ptfos.unios.hr/Hranom_Do_Zdravlja/), and „Proceeding of Congress Beekeeping and beeproducts“ (<http://www.hranomdozdravlja.com/?do=pcele>) Editor of web site: www.hranomdozdravlja.com

Prof. Veljko Đorđević, MD, PhD

Professor at the Department of Psychiatry and Psychology, Faculty of Medicine, University of Zagreb; President of Zagreb's Institute for the Culture of Health.

Veljko Đorđević is an Associate Professor at the Faculty of Medicine, University of Zagreb. He completed elementary school and Grammar School in Osijek, and in 1975 he graduated in medicine in Zagreb. In 1981 he completed his specialization in psychiatry, and in 2005 specialized in social psychiatry. He has completed a number of postgraduate studies, trainings and courses (Biomedicine and Healthcare - postgraduate studies, Acupuncture, General System Theory, Hypnotherapy - trainings), education in Transactional Analysis, Transactional Behavior Analysis, Psychotherapy as well as a number of international courses.

As a specialist psychiatrist, he was employed at the University Hospital in Zagreb "Sisters of Charity" until 1992, and from 2002 he was working as the Deputy Director at the University Hospital Centre in Zagreb, and then as the Head of the Institute for Preventive and Social Psychiatry at the Psychiatry Clinic of the University Hospital Centre in Zagreb, and nowadays he is the Head of the Polyclinic at the Clinic for Psychological Medicine of the University Hospital Centre in Zagreb.

He is the founder and the Head of the Center for Palliative Medicine, Medical Ethics and Communication Skills at the Faculty of Medicine, University of Zagreb, the President of the Zagreb's Institute for Culture of Health and the President of the Board of Directors of the Zagreb Foundation for the Care of People with Cerebral-Vascular Diseases.

He has been the editor and the presenter of the radio show "Man is a cure for man", National and Family Radio - a weekly popular contact programme in the field of mental health and health in general, as well as the editor and the presenter of the TV show programme "*With dr. Veljkom Đorđevićem - confidentially*" broadcast on Z1, a weekly popular contact programme in the field of mental health (since 1984 he was the presenter in over 1000 radio programmes).

He is a member of many Croatian and international societies, has been an editor of several professional and scientific journals and has won many awards.

Prof. Milenko Bevanda, MD, PhD

Specialist of Internal Medicine, Subspecialist-Gastroenterologist, Dean of the Faculty of Medicine in Mostar, Head of the Department of Gastroenterology of the Clinic for Internal Diseases of University Clinical Hospital Mostar, President of the Association of Gastroenterologists and Hepatologists in Bosnia and Herzegovina.

He was born on 22 July 1958. He completed primary school in Žepče and Grammar School in Ljubuški. He studied medicine and completed his studies in Sarajevo in 1984.

Until 1991, he worked in the Health Center Čitluk as a general practitioner. From November 1993, he started a specialization in internal medicine for the needs of University Clinical Hospital Mostar, completing it in Zagreb in April 1998. He completed his endoscopy studies at University Clinical Hospital Firule in Split in 1994.

He enrolled at the postgraduate Study in Ultrasound in Clinical Medicine in academic year 1996/1997 at the Faculty of Medicine, the branch of gastroenterology and nephrology, University of Zagreb. The title of Primarius was awarded to him in 1999. He obtained his MA in Zagreb on 31 January 2004, with the paper entitled "Endoscopy, Manometry and EMG in Evaluation of Morphology and Role of Anal Sphincter in patients with Chronic Constipation".

On 6 October 2006, he completed doctoral studies in Mostar, with the thesis entitled "Effect of Hyperthermic Chemo-Immunotherapy on Peritoneal Carcinomatosis in Mice".

In July 2007, he was awarded scientific title of an Assistant Professor in the area of medicine, the field of Clinical medical sciences – the branch of Internal medicine.

He completed his specialization in gastroenterology in June 2005 in Zagreb. During 1997 and 1998, he was appointed Assistant Minister of Health, Department of Occupational Health in Hercegovina-Neretva Canton.

From September 2007, he performed the duty of the Head of the Department of Internal Medicine. From September 2009 to September 2011, he was the Head of the Department of Internal Propaedeutics. On 17 September 2011, he was re-elected to the duty of the Head of the Department of Internal Medicine.

Since May 2011, he has been the President of the Association of Gastroenterologists and Hepatologists of Bosnia and Herzegovina (GEHA) and the Dean of the Faculty of Medicine since 1 October 2013. He published over 50 papers, participated in 13 projects, 29 times had the status of an invited lecturer, the author and a co-author in 4 books.

Prof. Fuad Pašić, MD, PhD

Specialist - General Surgeon, Subspecialist - Abdominal Surgeon, Head of General Abdominal Surgery Department of the University Clinical Centre Tuzla, President of "Obesity Society" Association in Bosnia and Herzegovina.

Fuad Pašić was born in Tuzla in 1964. He completed primary and secondary school in Tuzla. He graduated from the Faculty of Medicine in Tuzla. Since 1991 he has been employed at University Clinical Centre Tuzla. He has been working at the Clinic for Surgery of University Clinical Centre Tuzla since 1992. During the work at the Surgical Clinic of the University Clinical Centre Tuzla he went through all the stages of educational programmes, from a volunteer to a subspecialist doctor. Dr. Pašić specialized in General Surgery in 1999. He completed his postgraduate studies at the Faculty of Medicine in Tuzla, where he obtained his MA Degree in Medical Science in 2005. He completed his doctoral degree at the Medical Faculty in Tuzla in 2010 and became a doctor of medical sciences. He was engaged as an Assistant and Senior Assistant at the Department of Surgery at the Faculty of Medicine. In 2011, he became an Assistant Professor at the Department of Surgery at the Faculty of Medicine in Tuzla. In 2013, he was appointed the Head of the Department of General Abdominal Surgery of the University Clinical Centre Tuzla. In 2013, he became a subspecialist of abdominal surgery. He has had numerous professional trainings both in the country and abroad. He has obtained advanced education in the field of laparoscopic surgery of stomach, colon and hernia in Italy, France and Croatia. He was appointed the coordinator of the project of development of bariatric surgery and participated with the Management of University Clinical Centre Tuzla in founding a multidisciplinary team for the treatment of pathological obesity in December 2010. In 2015, together with his colleagues from the multidisciplinary team for obesity treatment, Dr. Pašić founded "Obesity Society", a state association in Bosnia and Herzegovina, which covers the Federation of Bosnia and Herzegovina and the Republic of Srpska with its activities. He was

elected the President of the Associations at the founding assembly which took place in April 2015. As the author and a co-author, he published 25 scientific papers. In the last four years, he has been invited 12 times to be a lecturer in the field of bariatric surgery in Croatia, Serbia, Montenegro and Bosnia and Herzegovina. As the author and a co-author he published 3 books. He published the book entitled "Bariatric Surgery for Obesity", Bešlin, Pašić, et.al. The book was catalogued in 2017 in the National Libraries of the Republic of Croatia and Bosnia and Herzegovina. Professor Pašić is an editor of the international journal *Endocrine, Oncology and Metabolismus*. He was appointed an Associate Professor at the Department of Surgery of the Faculty of Medicine in Tuzla in 2017. He is married to his wife, Amela, and has a son, Omar.

Prof. Miroslav Bekavac Bešlin, MD, PhD

Sisters of Charity, University Hospital in Zagreb, Department for Gastroenterology and Hepatobiliary and Pancreatic Surgery.

Miroslav Bekavac-Bešlin was born on 22 February 1952 in Zagreb. In 1982 he completed specialization in general surgery in Zagreb at Sisters of Charity Hospital and in 1990 the graduate study in general surgery at the Faculty of Medicine, University of Zagreb. In 1993, he was appointed an Assistant Lecturer at the Faculty of Dental Medicine, University of Zagreb, in the Department of General and War Surgery. He defended his doctoral dissertation in 1996. He earned the title of Primarius in 1996 and the title of an Assistant Professor in 1997. He became an Associate Professor in 2001 and has been a Full Professor at the Faculty of Dentistry, University of Zagreb, since 2004. He has been a full Professor with a permanent position since 2011/12. He was working at the Sisters of Charity Hospital in Zagreb as the Head of the Clinical Department for Gastroenterological, Hepatobiliary and Pancreatic Surgery and Minimally Invasive Surgery. Since 1983, he was working on the application of endoscopy, and in 1993/94, after the introduction of minimal invasive surgery at the Sisters of Charity Hospital, he introduced a series of laparoscopic and thoracoscopic procedures in the Head Clinic and in other clinical departments and hospitals. He is the Course leader of Minimally Invasive Surgery course in Postgraduate Studies at the Faculty of Dentistry, Zagreb.

He has had an additional training at different clinics and institutes in Croatia, Slovenia, Germany, France, Austria, Israel, Switzerland, Italy, Lithuania, Argentina and the United States.

He held lectures at national, European and world congresses and symposiums. He is the author and a co-author in several scripts, handbooks, textbooks and books. He has published more than 100 papers in the country and abroad, of which 20 in CC. He is a member of numerous national, European and world surgical societies. He was elected a regular member of the Croatian Academy of Medical Sciences in 2004. In October 2017, he moved to the Clinical Hospital Center Rijeka, the Clinic of Surgery. The aim of his moving to Clinical Hospital Center Rijeka was to develop surgical treatment of pathological obesity and to position Rijeka as the leading center for obesity treatment in Croatia.

Prof. Siniša Maksimović, MD, PhD

General Surgery Specialist, Director of the Public Health Institution, "Sveti Vračevi" Hospital in Bijeljina, Faculty of Medicine, University of Banja Luka.

He was born on 5 June 1966 in Bijeljina. He finished primary and secondary medical school in Bijeljina. He graduated from the Faculty of Medicine at the Faculty of Medicine, University of Belgrade, on 1 February 1993. The magisterial thesis entitled "Lymphogenic Metastases of Thyroid Gland Papillary Carcinoma and their Significance in Recurrence of the Disease" was defended on 4 June 1997. He passed the General Surgery Specialist Examination on 10 July 1998 at the Faculty of Medicine in Belgrade. He defended his doctoral dissertation at the Faculty of Medicine at the University of Belgrade on 9 May 2003, titled "Prognostic Factors of Evolution of Patients Operated on an Emergency for Left-Hand Colon and Rectum Cancer". He is a member of several national, European and world associations of surgeons and oncological surgeons. He has published 209 scientific papers in the field of oncological surgery at national, European and world congresses and scientific journals. He is the author of 3 monographs, a co-author of 1 reviewed university textbook "Basics of Clinical Oncology with Radiotherapy" published by the Faculty of Medicine in Banja Luka in 2015. He is a co-author of 1 professional book "Quality of Life of Patients after Total Laryngectomy" by the international publisher: Lap Lambert Academic Publishing 2017. He was elected as an Associate Professor at the Department of Surgery at the Faculty of Medicine, University of Banja Luka on 1 March 2013. He has won many national and international awards. He has been employed at the Public Health Institution, "Sveti Vračevi" Hospital in Bijeljina as a general surgeon, currently on the position of the

Director of the Hospital. Since November 2014, he has been a member of the National Assembly of the Republic of Srpska. He is married, a father of two children.

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