TIMSKI PRISTUP BOLESNICIMA S UPALNIM REUMATSKIM BOLESTIMA

SURADNJA KARDIOLOGA I REUMATOLOGA

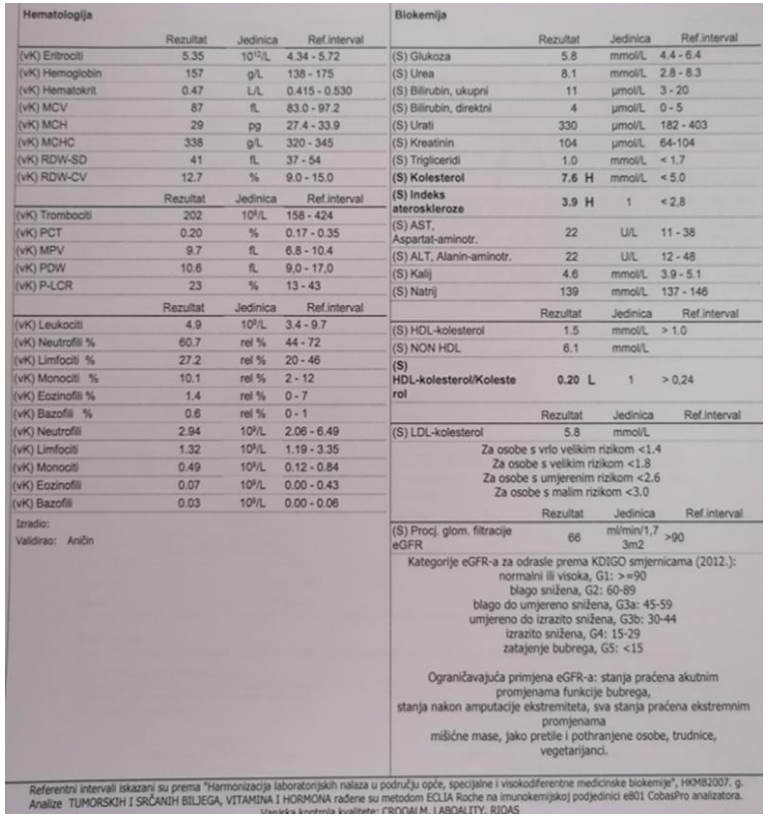
Iva Uravić Bursać

PRIKAZ SLUČAJA

- **Muškarac, 1961.**

- **Unazad pola godine u većem naporu anginozne tegobe**
- **Lijekove ne koristi**
- **Fizički aktivan**
- **Tlak ne mjeri**
- **Funkcije i navike uredne. Alergije negira**
- **Dosadašnje bolesti: operacija ingvinalne kile 2000., psorijatična bolest unazad 15 godina**
- **Obiteljska: pozitivna za KVB**

IZ STATUSA I NALAZA SE IZDVAJA



Hematologija

	Rezultat	Jedinica	Ref.interval
(vK) Eritrociti	5.35	10^{12}/L	4.34 - 5.72
(vK) Hemoglobin	157	g/L	138 - 175
(vK) Hematokrit	0.47	L/L	0.415 - 0.530
(vK) MCV	87	fL	83.0 - 97.2
(vK) MCH	29	pg	27.4 - 33.9
(vK) MCHC	338	g/L	320 - 345
(vK) RDW-SD	41	fL	37 - 54
(vK) RDW-CV	12.7	%	9.0 - 15.0

	Rezultat	Jedinica	Ref.interval
(vK) Trombociti	202	10^9/L	158 - 424
(vK) PCT	0.20	%	0.17 - 0.35
(vK) MPV	9.7	fL	6.8 - 10.4
(vK) PDW	10.6	fL	9,0 - 17,0
(vK) P-LCR	23	%	13 - 43

	Rezultat	Jedinica	Ref.interval
(vK) Leukociti	4.9	10^9/L	3.4 - 9.7
(vK) Neutrofili %	60.7	rel %	44 - 72
(vK) Limfociti %	27.2	rel %	20 - 46
(vK) Monociti %	10.1	rel %	2 - 12
(vK) Eozinofili %	1.4	rel %	0 - 7
(vK) Bazofili %	0.6	rel %	0 - 1
(vK) Neutrofili	2.94	10^9/L	2.06 - 6.49
(vK) Limfociti	1.32	10^9/L	1.19 - 3.35
(vK) Monociti	0.49	10^9/L	0.12 - 0.84
(vK) Eozinofili	0.07	10^9/L	0.00 - 0.43
(vK) Bazofili	0.03	10^9/L	0.00 - 0.06

Izradio:
Validirao: Aničin

Biokemija

	Rezultat	Jedinica	Ref.interval
(S) Glukoza	5.8	mmol/L	4.4 - 6.4
(S) Urea	8.1	mmol/L	2.8 - 8.3
(S) Bilirubin, ukupni	11	µmol/L	3 - 20
(S) Bilirubin, direktni	4	µmol/L	0 - 5
(S) Urati	330	µmol/L	182 - 403
(S) Kreatinin	104	µmol/L	64-104
(S) Triglyceridi	1.0	mmol/L	< 1.7
(S) Kolesterol	**7.6 H**	mmol/L	< 5.0
(S) Indeks ateroskleroze	**3.9 H**	1	< 2,8
(S) AST, Aspartat-aminotr.	22	U/L	11 - 38
(S) ALT, Alanin-aminotr.	22	U/L	12 - 48
(S) Kalij	4.6	mmol/L	3.9 - 5.1
(S) Natrij	139	mmol/L	137 - 146

	Rezultat	Jedinica	Ref.interval
(S) HDL-kolesterol	1.5	mmol/L	> 1.0
(S) NON HDL	6.1	mmol/L	
(S) HDL-kolesterol/Kolesterol	**0.20 L**	1	> 0,24

	Rezultat	Jedinica	Ref.interval
(S) LDL-kolesterol	5.8	mmol/L	

Za osobe s vrlo velikim rizikom <1.4
Za osobe s velikim rizikom <1.8
Za osobe s umjerenim rizikom <2.6
Za osobe s malim rizikom <3.0

	Rezultat	Jedinica	Ref.interval
(S) Procj. glom. filtracije eGFR	66	ml/min/1,7 3m2	>90

Kategorije eGFR-a za odrasle prema KDIGO smjernicama (2012.):
normalni ili visoka, G1: >=90
blago snižena, G2: 60-89
blago do umjereno snižena, G3a: 45-59
umjereno do izrazito snižena, G3b: 30-44
izrazito snižena, G4: 15-29
zatajenje bubrega, G5: <15

Ograničavajuća primjena eGFR-a: stanja praćena akutnim promjenama funkcije bubrega, stanja nakon amputacije ekstremiteta, sva stanja praćena ekstremnim promjenama mišićne mase, jako pretile i pothranjene osobe, trudnice, vegetarijanci.

Referentni intervali iskazani su prema "Harmonizacija laboratorijskih nalaza u području opće, specijalne i visokodiferentne medicinske biokemije", HKMB2007. g.
Analize TUMORSKIH I SRČANIH BILJEGA, VITAMINA I HORMONA rađene su metodom ECLIA Roche na imunokemijskoj podjedinici e801 CobasPro analizatora.

Izvor: arhiva bolnice

Kolesterol 7,6 mmol/l
LDL kolesterol 5,8 mmol/L

Arterijski tlak: 150/95 mmHg

Kalkulatori kardiovaskularnog rizika

ASCVD 18%

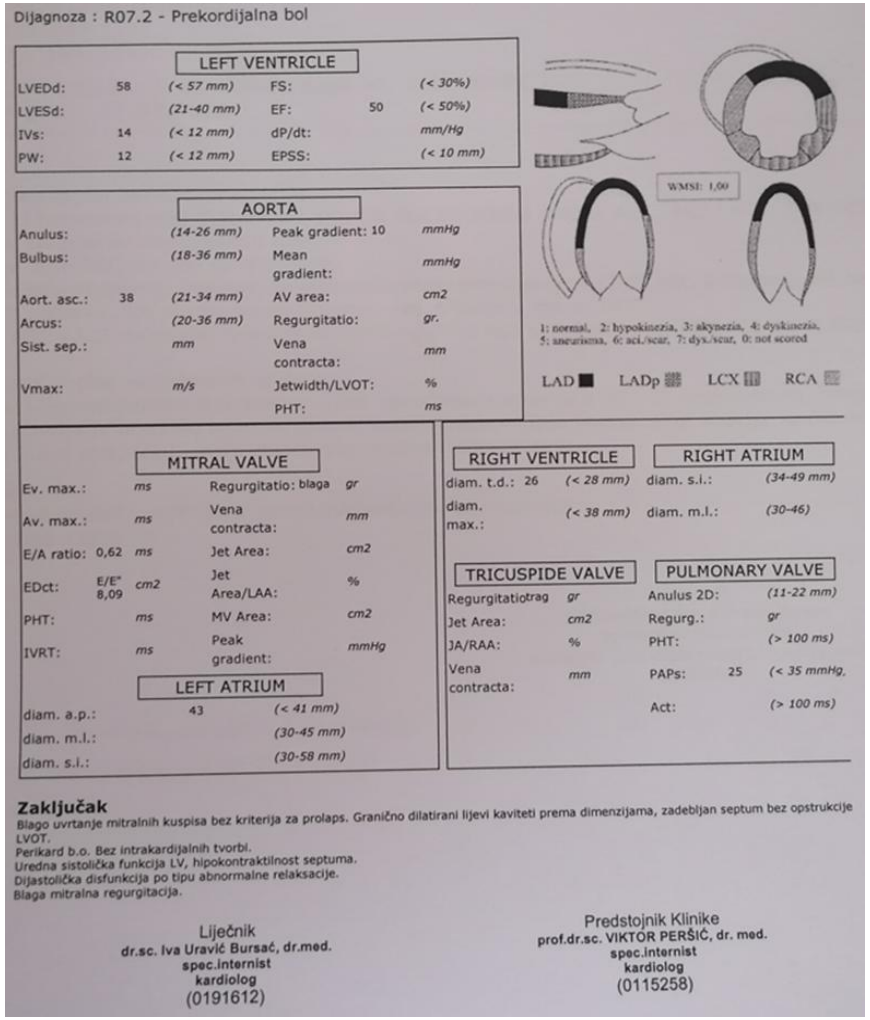
FRS 25,3%

SCORE 10%

- ASCVD – AtheroSlerotic CardioVascular Disease; FRS – Framingham Risk Score; SCORE – Systematic Coronary Risk Evaluation

Ultrazvuk srca

LVEDd 58 mm, IVS 14 mm, LVPW 12 mm, EF 50%. Ao 38 mm, Ao PG 10 mmHg, LA 43 mm.
Granično dilatirani lijevi keviteti prema dimenzijama, zadebljan septum bez opstrukcije LVOT. Hipokontraktilnost septuma, EF 50%.



Dijagnoza : R07.2 - Prekordijalna bol

LEFT VENTRICLE

LVEDd:	58	(< 57 mm)	FS:		(< 30%)
LVESd:		(21-40 mm)	EF:	50	(< 50%)
IVs:	14	(< 12 mm)	dP/dt:		mm/Hg
PW:	12	(< 12 mm)	EPSS:		(< 10 mm)

AORTA

Anulus:		(14-26 mm)	Peak gradient:	10	mmHg
Bulbus:		(18-36 mm)	Mean gradient:		mmHg
Aort. asc.:	38	(21-34 mm)	AV area:		cm2
Arcus:		(20-36 mm)	Regurgitatio:		gr.
Sist. sep.:		mm	Vena contracta:		mm
Vmax:		m/s	Jetwidth/LVOT:		%
			PHT:		ms

WMSI: 1,00

1: normal, 2: hypokinezia, 3: akynezia, 4: dyskinezia, 5: aneurisma, 6: aci./scar, 7: dys./scar, 0: not scored

LAD ■ LADp ▒ LCX ▒ RCA ▒

MITRAL VALVE

Ev. max.:		ms	Regurgitatio:	blaga	gr
Av. max.:		ms	Vena contracta:		mm
E/A ratio:	0,62	ms	Jet Area:		cm2
EDct:	E/E" 8,09	cm2	Jet Area/LAA:		%
PHT:		ms	MV Area:		cm2
IVRT:		ms	Peak gradient:		mmHg

LEFT ATRIUM

diam. a.p.:	43	(< 41 mm)
diam. m.l.:		(30-45 mm)
diam. s.i.:		(30-58 mm)

RIGHT VENTRICLE

diam. t.d.:	26	(< 28 mm)
diam. max.:		(< 38 mm)

RIGHT ATRIUM

diam. s.i.:	(34-49 mm)
diam. m.l.:	(30-46)

TRICUSPIDE VALVE

Regurgitatio trag		gr
Jet Area:		cm2
JA/RAA:		%
Vena contracta:		mm

PULMONARY VALVE

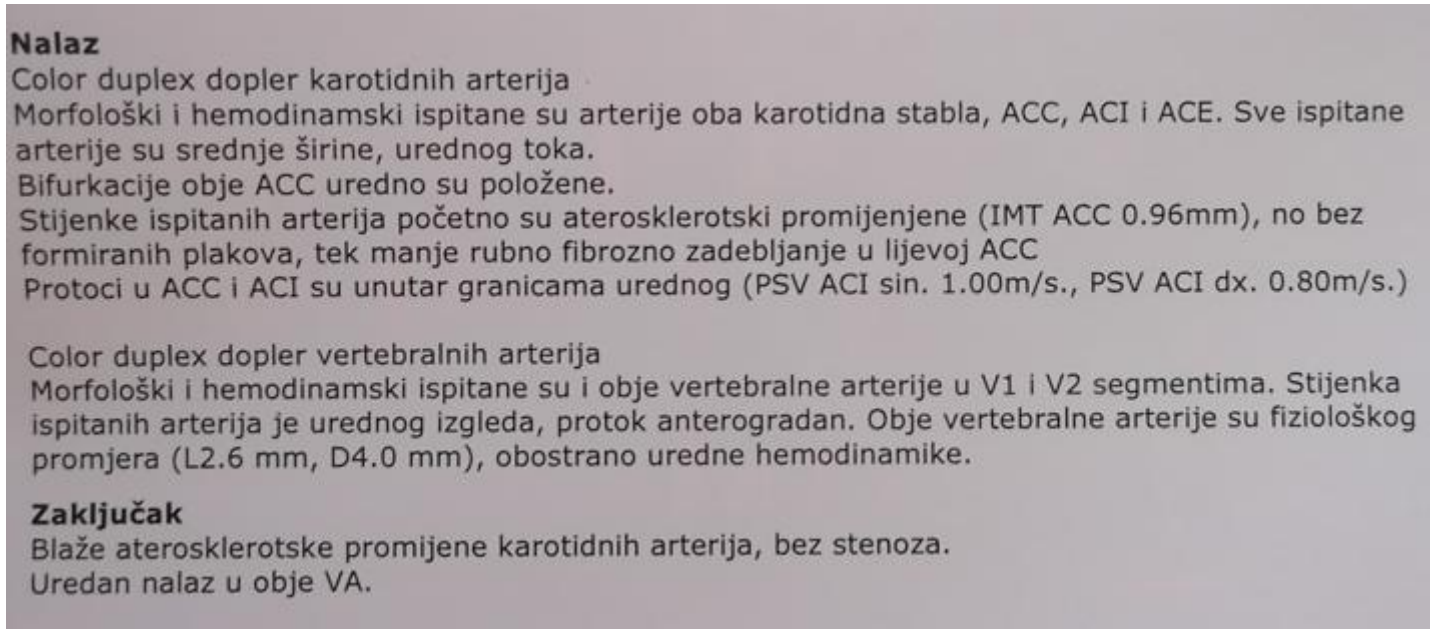
Anulus 2D:		(11-22 mm)
Regurg.:		gr
PHT:		(> 100 ms)
PAPs:	25	(< 35 mmHg,
Act:		(> 100 ms)

Zaključak
Blago uvrtanje mitralnih kuspisa bez kriterija za prolaps. Granično dilatirani lijevi kaviteti prema dimenzijama, zadebljan septum bez opstrukcije LVOT.
Perikard b.o. Bez intrakardijalnih tvorbi.
Uredna sistolička funkcija LV, hipokontraktilnost septuma.
Dijastolička disfunkcija po tipu abnormalne relaksacije.
Blaga mitralna regurgitacija.

Liječnik
dr.sc. Iva Uravić Bursać, dr.med.
spec.internist
kardiolog
(0191612)

Predstojnik Klinike
prof.dr.sc. VIKTOR PERŠIĆ, dr. med.
spec.internist
kardiolog
(0115258)

Ultrazvuk karotida



Nalaz
Color duplex dopler karotidnih arterija
Morfološki i hemodinamski ispitane su arterije oba karotidna stabla, ACC, ACI i ACE. Sve ispitane arterije su srednje širine, urednog toka.
Bifurkacije obje ACC uredno su položene.
Stijenke ispitanih arterija početno su aterosklerotski promijenjene (IMT ACC 0.96mm), no bez formiranih plakova, tek manje rubno fibrozno zadebljanje u lijevoj ACC
Protoci u ACC i ACI su unutar granicama urednog (PSV ACI sin. 1.00m/s., PSV ACI dx. 0.80m/s.)

Color duplex dopler vertebralnih arterija
Morfološki i hemodinamski ispitane su i obje vertebralne arterije u V1 i V2 segmentima. Stijenka ispitanih arterija je urednog izgleda, protok anterogradan. Obje vertebralne arterije su fiziološkog promjera (L2.6 mm, D4.0 mm), obostrano uredne hemodinamike.

Zaključak
Blaže aterosklerotske promijene karotidnih arterija, bez stenoza.
Uredan nalaz u obje VA.

Izvor: arhiva bolnice

Koronarografija

Opis i tijek operacije

KORONAROGRAFIJA (Pristup desno radijalno)

Lijeva koronarna arterija (JL 3.5): deblo srednje dugačko, aterosklerotski promjenjeno, bez značajnih stenoza.

LAD: difuzno aterosklerotski promjenjena uz dugopoteznu 50%tnu stenozu proksimalnog segmenta te preokluzivnu, 99%tnu, stenozu srednjeg segmenta pri odvajanju D1 grane koja je ishodišno 80% stenozirana (Medina1,1,1).

LCx: difuzno aterosklerotski promjenjena, 50%tna stenoza proksimalnog segmenta te 85%tna stenoza distalnog segmenta; OM1: difuzno aterosklerotski promjenjena, uz dvije 80% tne stenoze proksimalnog segmenta.

Desna koronarna arterija (JR 4.0): dominantna, difuzno aterosklerotski promjenjena uz digopoteznu 80-90% stenozu proksimalnog segmenta nakon čega slijedi CTO srednjeg segmenta. Postokluzivni tok dobro se prikazuje heterolognim kolateralama.

Zaključak: Aterosklerotska bolest lijeve i desne koronarne arterije u desnoj dominaciji s značajnim stenozama LAD, LCX, OM1, RCA te CTO RCA.

Preporuka: Za prikaz kardiološko - kardiokirurškom konziliju radi odluke o daljnjem kirurškom liječenju.

DAP doza

23,4 µGym2

Izvor: arhiva bolnice

Višežilna koronarna bolest

TERAPIJA

- **Bisoprolol 1,25 mg**
- **ASA 100 mg**
- **Atorvastatin/perindopril/amlodipin 20/5/5 mg**
- **Terapija psorijatične bolesti**

Nefarmakološke mjere:

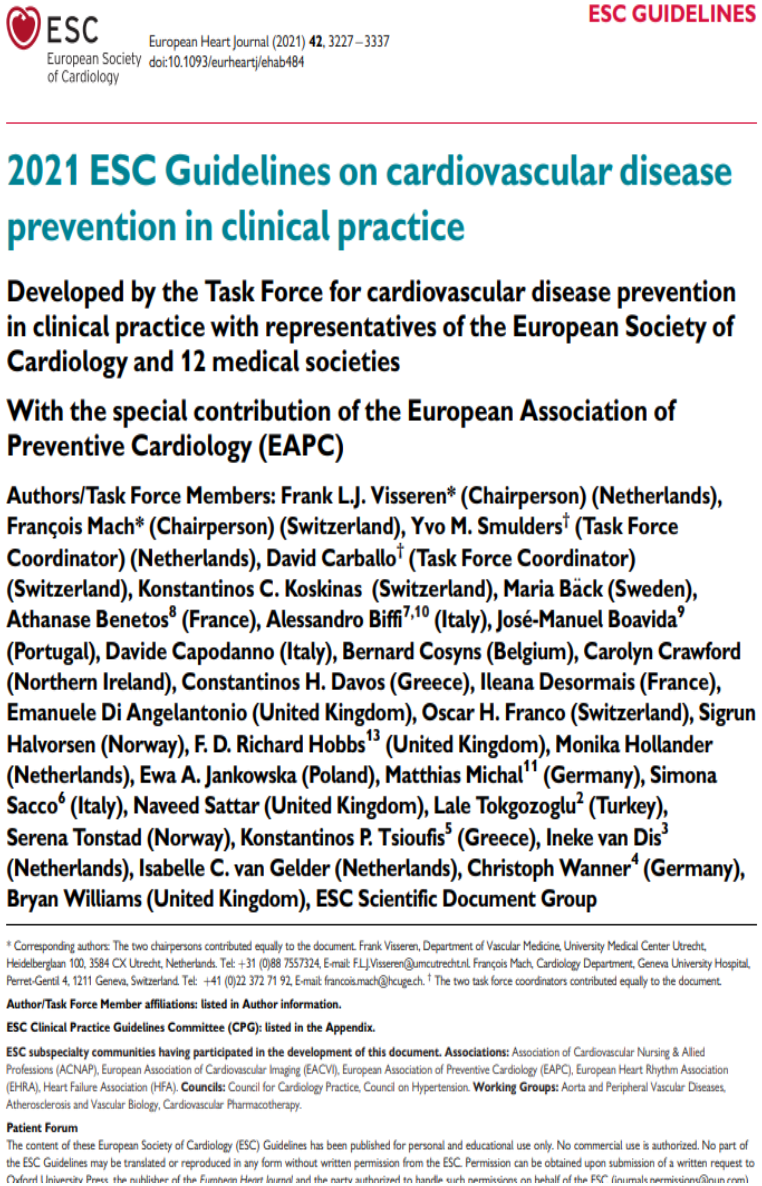
- ✓fizička aktivnost
- ✓prehrambene preporuke
- ✓preporuke za poboljšanje ustrajnosti u uzimanju terapije

DIJAGNOZE

- **Višežilna koronarna bolest**
- **Arterijska hipertenzija**
- **Hiperlipidemija**
- **Blaže aterosklerotske promjene karotida**
- **Psorijatični artritis**

Izvor: arhiva bolnice

https://businesscollective.com/how-thinking-differently-is-the-greatest-thing-you-can-do-for-your-business/index.html



ESC European Society of Cardiology

European Heart Journal (2021) **42**, 3227 – 3337
doi:10.1093/eurheartj/ehab484

ESC GUIDELINES

2021 ESC Guidelines on cardiovascular disease prevention in clinical practice

Developed by the Task Force for cardiovascular disease prevention in clinical practice with representatives of the European Society of Cardiology and 12 medical societies

With the special contribution of the European Association of Preventive Cardiology (EAPC)

Authors/Task Force Members: Frank L.J. Visseren* (Chairperson) (Netherlands), François Mach* (Chairperson) (Switzerland), Yvo M. Smulders† (Task Force Coordinator) (Netherlands), David Carballo† (Task Force Coordinator) (Switzerland), Konstantinos C. Koskinas (Switzerland), Maria Bäck (Sweden), Athanase Benetos[8] (France), Alessandro Biffi[7,10] (Italy), José-Manuel Boavida[9] (Portugal), Davide Capodanno (Italy), Bernard Cosyns (Belgium), Carolyn Crawford (Northern Ireland), Constantinos H. Davos (Greece), Ileana Desormais (France), Emanuele Di Angelantonio (United Kingdom), Oscar H. Franco (Switzerland), Sigrun Halvorsen (Norway), F. D. Richard Hobbs[13] (United Kingdom), Monika Hollander (Netherlands), Ewa A. Jankowska (Poland), Matthias Michal[11] (Germany), Simona Sacco[6] (Italy), Naveed Sattar (United Kingdom), Lale Tokgozoglu[2] (Turkey), Serena Tonstad (Norway), Konstantinos P. Tsioufis[5] (Greece), Ineke van Dis[3] (Netherlands), Isabelle C. van Gelder (Netherlands), Christoph Wanner[4] (Germany), Bryan Williams (United Kingdom), ESC Scientific Document Group

* Corresponding authors: The two chairpersons contributed equally to the document. Frank Visseren, Department of Vascular Medicine, University Medical Center Utrecht, Heidelberglaan 100, 3584 CX Utrecht, Netherlands. Tel: +31 (0)88 7557324, E-mail: F.L.J.Visseren@umcutrecht.nl. François Mach, Cardiology Department, Geneva University Hospital, Perret-Gentil 4, 1211 Geneva, Switzerland. Tel: +41 (0)22 372 71 92, E-mail: francois.mach@hcuge.ch. † The two task force coordinators contributed equally to the document.

Author/Task Force Member affiliations: listed in Author information.

ESC Clinical Practice Guidelines Committee (CPG): listed in the Appendix.

ESC subspecialty communities having participated in the development of this document. Associations: Association of Cardiovascular Nursing & Allied Professions (ACNAP), European Association of Cardiovascular Imaging (EACVI), European Association of Preventive Cardiology (EAPC), European Heart Rhythm Association (EHRA), Heart Failure Association (HFA). **Councils:** Council for Cardiology Practice, Council on Hypertension. **Working Groups:** Aorta and Peripheral Vascular Diseases, Atherosclerosis and Vascular Biology, Cardiovascular Pharmacotherapy.

Patient Forum

2021 ESC smjernice za **prevenciju kardiovaskularnih bolesti** u kliničkoj praksi

Pregled 2021 ESC smjernica za prevenciju KVB

Individualizirana prevencija KVB kod:

- **naoko zdravih osoba**
- bolesnika s razvijenim ASKVB
- osoba koje boluju od dijabetes melitusa
- osoba s obiteljskom hiperkolesterolemijom
- bolesnika s bubrežnom bolešću

Psorijatični artritis (PsA)

Kronična upalna bolest perifernih zglobova i aksijalnog skeleta

30% bolesnika s psorijazom ima PsA

➢ Izvanzglobne pojavnosti bolesti:

- **uveitis**
- **konjuktivitis**
- **upalne bolesti crijeva**
- **infekcije genitourinarnog sustava**
- **intersticijska bolesti pluća**
- **kronična bubrežna bolest**
- **kardiovaskularne bolesti (KV)**

➢ Komorbiditeti:

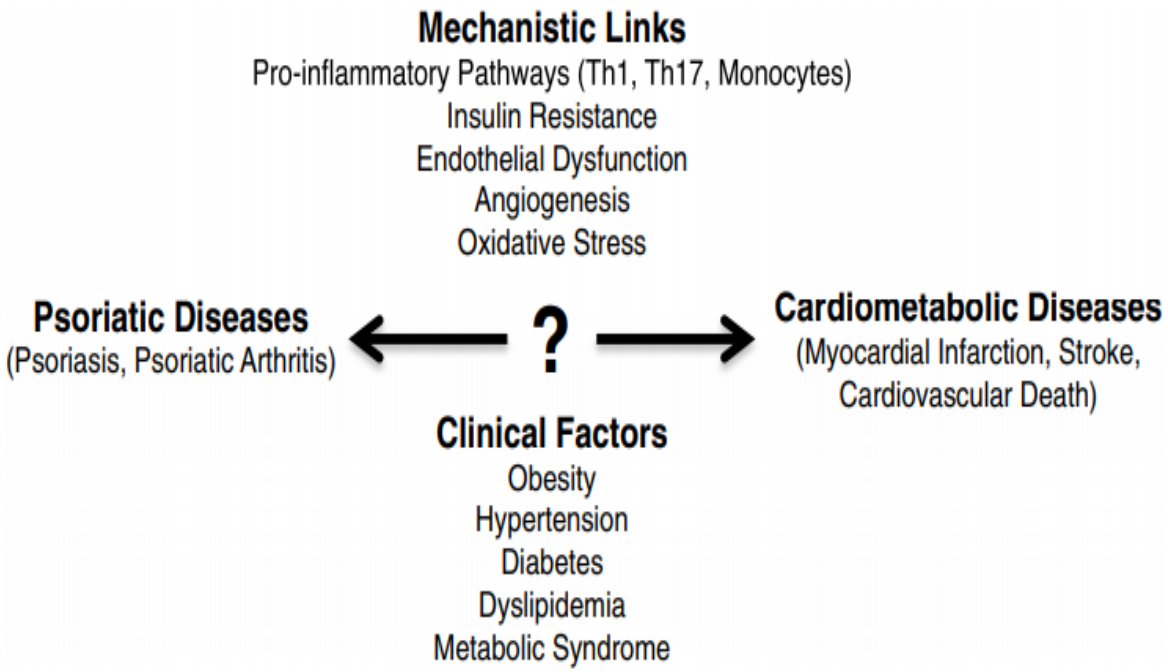
- **debljina**
- **šećerna bolest**
- **dislipidemija**
- **arterijska hipertenzija**

Castañeda S, et al. Clinic Rev Allerg Immunol 2017;56:278–292.
Ritchlin CT, et al. Psoriatic Arthritis. N Engl J Med. 2017;376(10):957-970.
Sobchak C, et al. Curr Rheumatol Rep 2017;19(10):63.

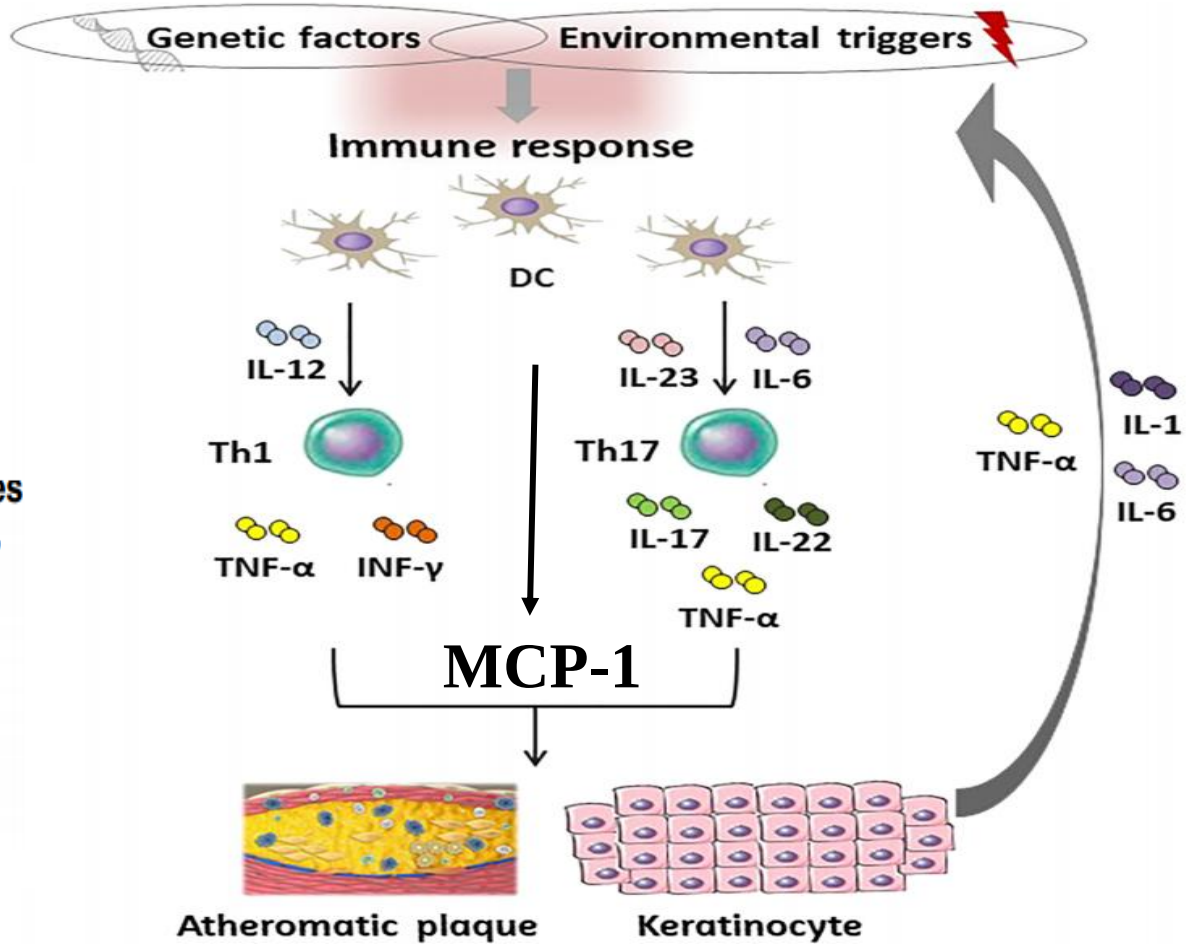
- **Metabolički sindrom češći kod PsA**
- **43% veći rizik KV bolesti kod PsA**
- **PsA je nezavisni čimbenik rizika ateroskleroze, a time i KV bolesti i smrtnosti**

Promjene su asimptomatske u 50% slučajeva!

Shema poveznice PsA i KV bolesti



Prilagođeno prema: Yim KM, Armstrong A. Updates on cardiovascular comorbidities associated with psoriatic diseases: epidemiology and mechanisms. Rheumatol Int 2017;37(1):97-105.

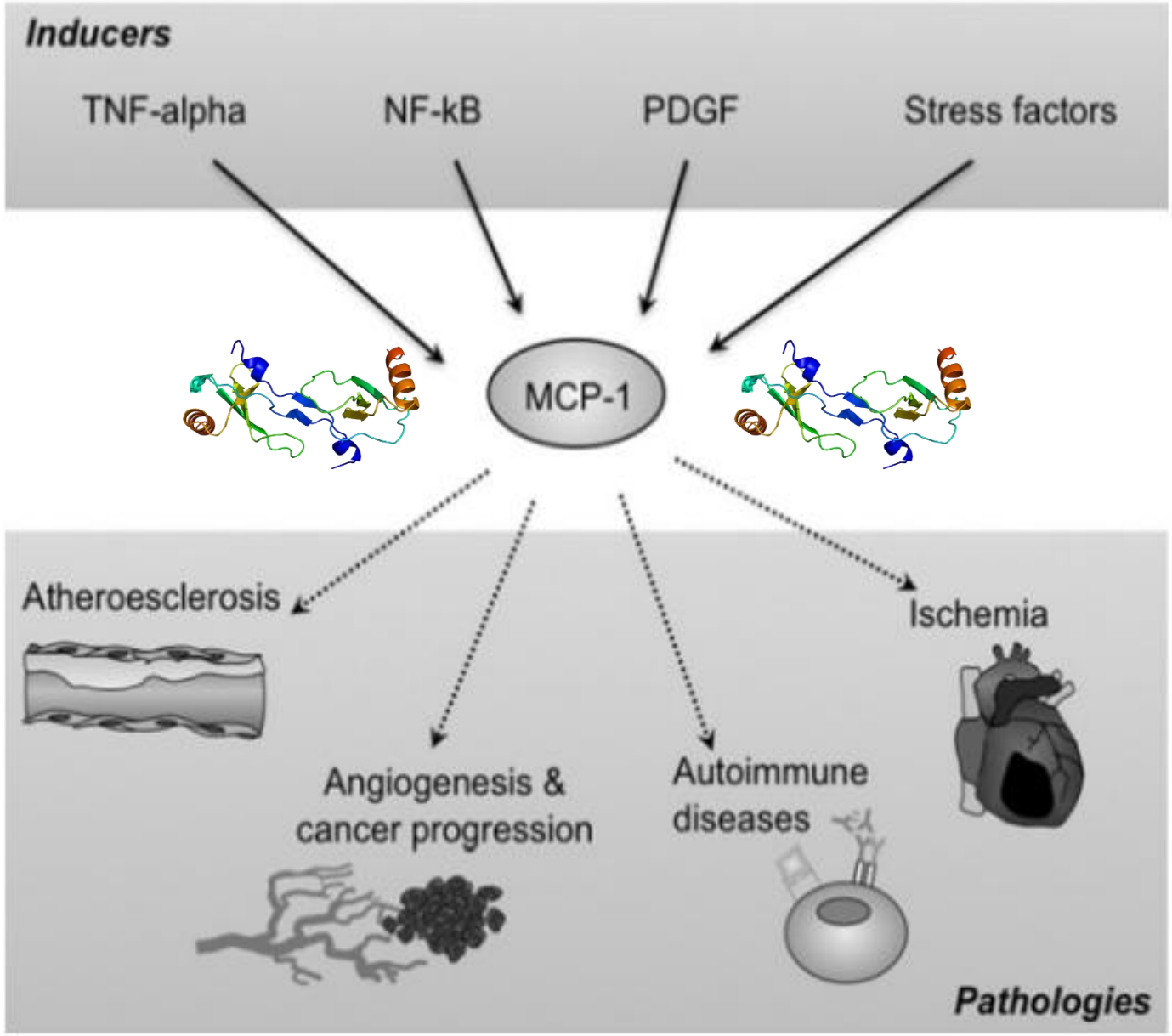


Prilagođeno prema: Lazou A et al. Chronic inflammatory disease, myocardial function and cardioprotection. The Br J Pharmacol. 2020;1-18

MCP-1 razlikuje spondiloartritis od osteoartritisa

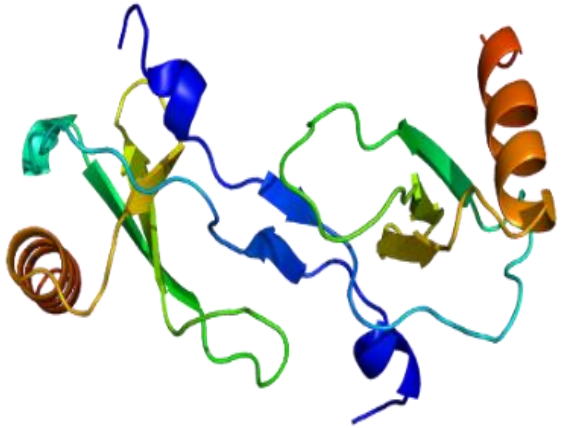
Čimbenici koji potiču stvaranje MCP-1

Bolesti uzrokovane izražajem MCP-1



Prilagođeno prema:
Melgarejo E et al. The Inter Jour of Biochem and Cell Biol 2009(41)998-1001

MCP-1 u plazmi



- **Uzrokuje zadebljanje intime i medije karotidnih arterija**

- **U pozitivnom je međuodnosu s lošijom prognozom bolesnika s akutnim infarktom miokarda**
  - **potiče novačenje proupalnih leukocita**
  - **promiče ozljedu miokarda**
  - **fibrotično preuređuje miokard**
  - **promiče disfunkciju miokarda**

… zatajenje srca

Hanna A, Frangogiannis NG. Inflammatory Cytokines and Chemokines as Therapeutic Targets in Heart Failure. Cardiovasc Drugs Ther. 2020;34(6):849-863.

Ciljevi istraživanja

- **Utvrditi koncentraciju MCP-1 u serumu bolesnika s PsA**

- **Odrediti međuodnos MCP-1 s**

a) parametrima aktivnosti PsA

- BASDAI (engl. Bath Ankylosing Spondylitis Disease Activity Indeks)
- DAPSA (engl. Disease Activity in Psoriatic Arthritis)
- Edem sakroilijakalnih zglobova

b) parametrima funkcijskog statusa bolesnika s PsA

- BASFI (eng. Bath Ankylosing Spondylitis Functional Index)

...neovisno o reumatološkoj terapiji

Ciljevi istraživanja

c) sa subkliničkim oblicima KV bolesti na
- miokardu
- koronarnim arterijama
- karotidnim arterijama
- perifernim arterijama

- Odrediti međuodnos MCP-1 s
  - proupalnim laboratorijskim biljezima i biljezima oštećenja KV sustava
  - duljinom trajanja PsA
  - BSA (eng. Body surface area)
  - parametrima metaboličkog sindroma
  - područjem erozija sakroilijakalnih zglobova

- Odrediti međuodnos sastavnica BASDAI i DAPSA te BASFI s klasičnim čimbenicima KV rizika

- Usporediti plazmatske koncentracije MCP-1 bolesnika s PsA i zdravim ispitanicima

Ispitanici

- **Bolesnici s PsA**
  - **CASPAR**
    (engl. Classification Criteria for Psoriatic Arthritis)
  - **ASAS**
    (engl. Assessment of SpondyloArthritis international Society)
- **Zdravi ispitanici**

ISKLJUČNI KRITERIJI:

- **Infekcije**
- **Imunodeficijencije**
- **Srčano zatajivanje III i IV stupnja**
- **Zatajivanje bubrega IV i V stupnja**
- **Zatajenje jetre**
- **Neregulirana arterijska hipertenzija**
- **Neregulirana šećerna bolest**
- **Poremećaj funkcije limfnog sustava**
- **Zloćudne bolesti**
- **Žene reprodukcijske dobi**
- **Dob >80 godina**
- **Statin u terapiji**

Materijali i metode

Anamneza

- Trajanje psorijaze ili PsA
- Jutarnja zakočenost
- Podaci o pušenju
- Dosadašnje bolesti i komorbiditeti
- Terapija
- Obiteljska anamneza za KV i reumatološke bolesti

Laboratorijski nalazi

- MCP-1
- Parametri upale SE, C-reaktivni protein
- Kompletna krvna slika
- Rutinski biokemijski parametri

Reumatološki pregled

- BBZ (0-68)
- BOZ (0-66)
- VAS boli (0-10)
- BSA
- MR SI zglobova

- BASDAI
- DAPSA
- BASFI

Kardiološki pregled

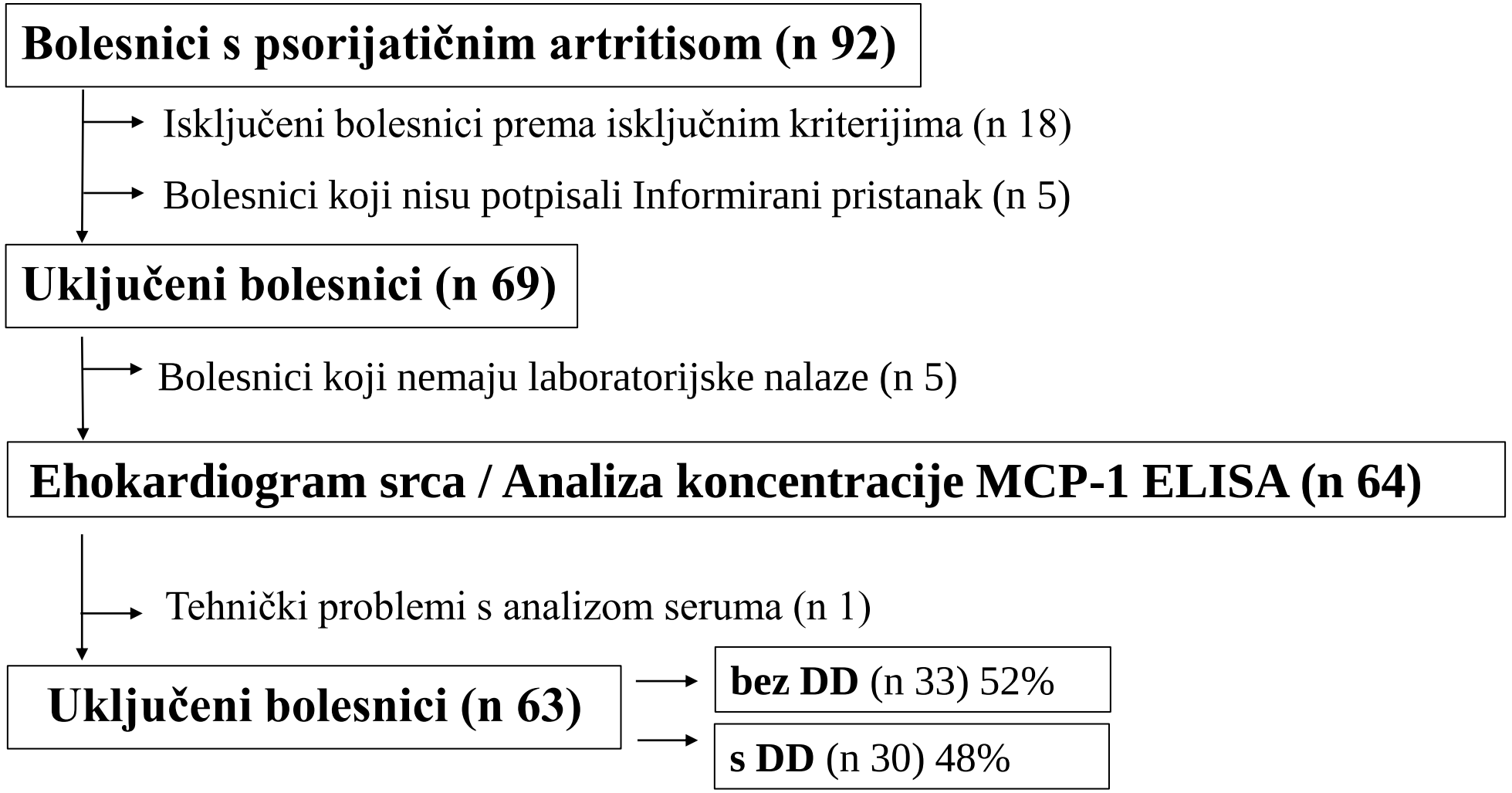
- Dob, spol
- Visina, težina, opseg struka, ITM
- Krvni tlak
- Tlak pulsa
- Puls
- Procjena KV rizika prema FRS

Kardiološke dijagnostičke metode

- Ergometrijsko testiranje
- Ultrazvuk srca
- Ultrazvuk karotidnih arterija
- Krutost perifernih arterija
- Kompjuterizirana tomografija koronarnih arterija

Rezultati

Regrutirnje bolesnika s psorijatičnim artritisom



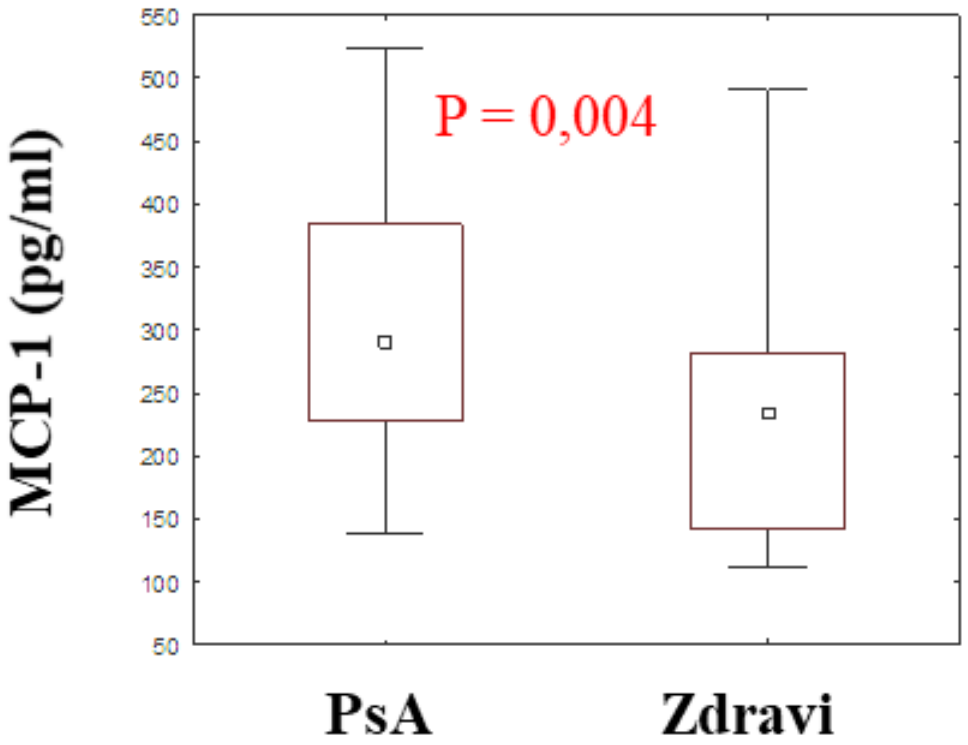
Laboratorijski nalazi bolesnika s PsA

	Zdravi ispitanici Medijan (25.;75. percentila)	PsA Medijan (25.;75. percentila)	P vrijednost
Sedimentracija eritrocita (mm)	**4 (4; 7,75)**	**9 (6; 15,5)**	0,057
C-reaktivni protein (mg/l)	1,2 (0,8; 1,9)	1,4 (0,8; 3,3)	0,225
Leukociti ($x10^9$/l)	**5,35 (4,67; 6,32)**	**6,45 (5,3; 6,91)**	**0,03**
Trombociti ($x10^9$/l)	234 (218; 259.5)	237 (207,25; 285,7)	0,70
Eritrociti ($x10^{12}$/l)	5,02 (4,61; 5,19)	4,76 (4,45; 5,06)	0,14
Hemoglobin (g/l)	149 (137; 156)	143 (133,5; 151,7)	0,128
Aspartat - aminotransaminaza (U/l)	21,5 (18,75; 29,5)	23 (19,5; 29)	0,72
Alanin - aminotransaminaza (U/l)	20,5 (16; 32,75)	21 (19; 37)	0,43
G-glutamil transferaza (U/l)	20,5 (12,75; 27)	21 (14; 30,5)	0,83
Urea (mmol/l)	5,6 (4,97; 6,25)	5,6 (4,4; 6,6)	0,72
Urati (µmol/l)	335 (276; 360)	304 (238; 352)	0,384
Glukoza (mmol/l)	5,1 (4,9; 5,47)	5,4 (5; 6,5)	0,16
Ukupni kolesterol (mmol/l)	**5,3 (4,35; 5,75)**	**5,8 (5,3; 6,2)**	**0,014**
LDL-kolesterol (mmol/l)	**3,35 (2,5; 3,8)**	**3,8 (3,3; 4,1)**	**0,019**
HDL-kolesterol (mmol/l)	1,45 (1,22; 1,8)	1,2 (1,1; 1,6)	0,136
Trgliceridi (mmol/l)	1,25 (0,9; 1,5)	1,4 (1,1; 2,1)	0,317
Troponin T (ng/l)	7 (5,37; 8)	6 (5; 7)	0,105
NTproBNP (pmol/l)	39 (25;67)	56,5 (24,25; 98,25)	0,63

LDL - Low Density Lipoprotein, HDL – High Density Lipoprotein; NT proBNP - N-terminal pro Brain Natriuretic Peptide; MCP-1 - Monocyte Chemoattractant Protein-1

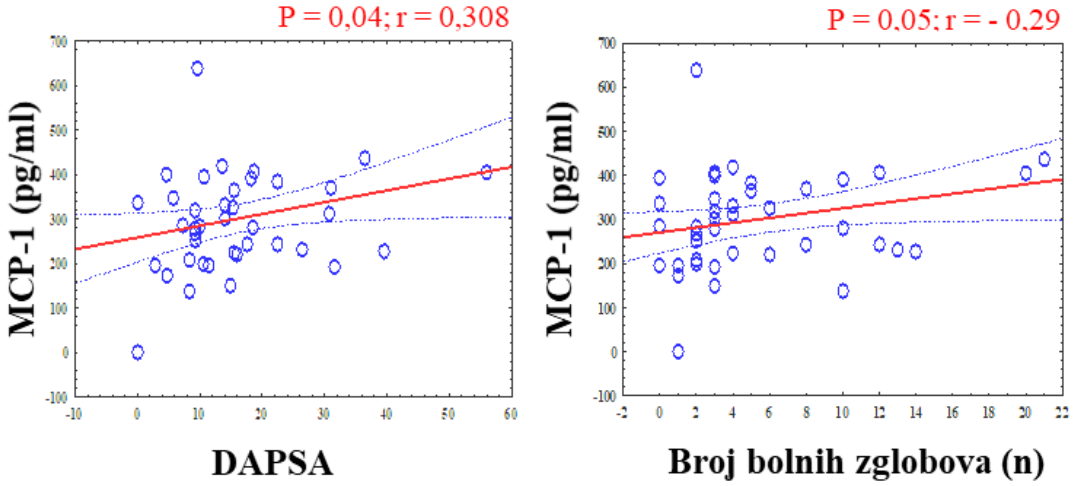
MCP-1 u serumu bolesnika s PsA je statistički značajno viši nego u zdravih ispitanika

.

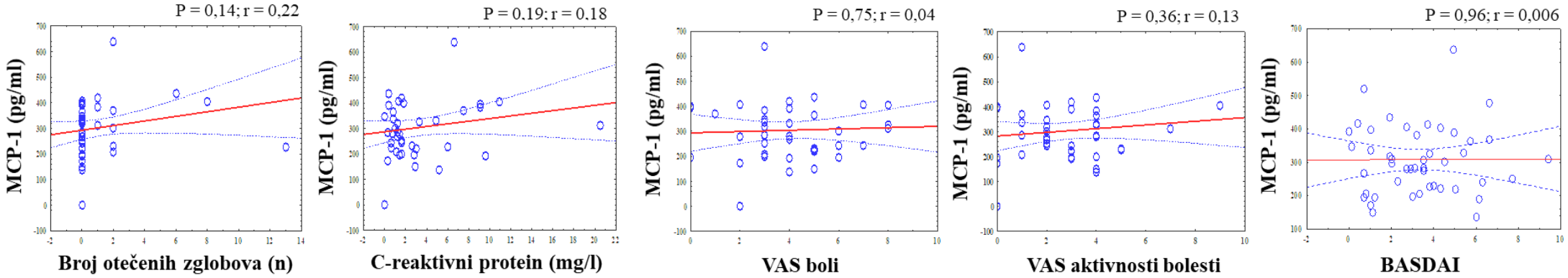


▫Srednja vrijednost,
□25%-75%,
Non-Outlier Range

MCP-1 je u pozitivnom međuodnosu s DAPSA ljestvicom i brojem bolnih zglobova

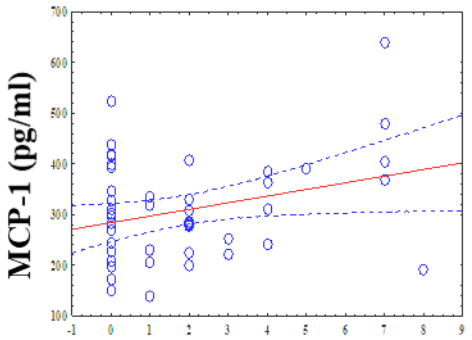


MCP-1 nije u statistički značajnom međuodnosu s brojem otečenih zglobova, CRP, VAS boli i aktivnosti bolesti i BASDAI ljestvicom



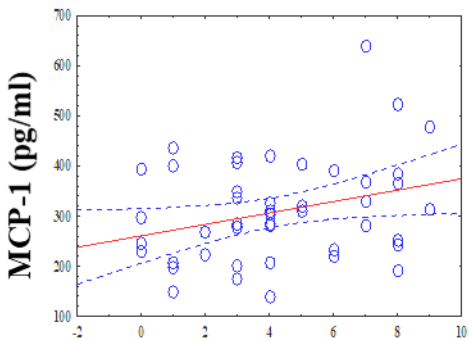
MCP-1 je u pozitivnom međuodnosu s pojedim sastavnicama BASFI ljestvice

P = 0,04; r = 0,301



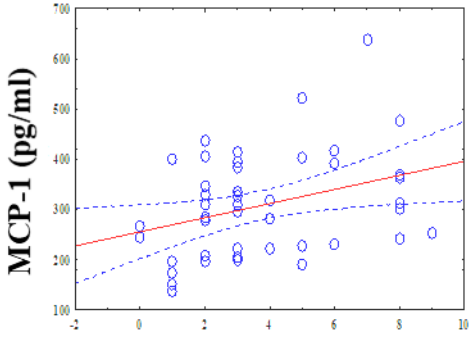
Ustajanje iz sjedećeg položaja bez pomoći ruku

P = 0,04; r = 0,302



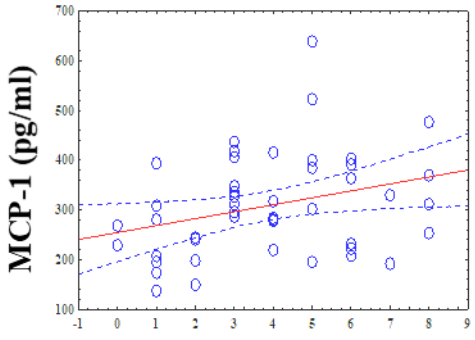
Ustajanje s poda bez pomoći

P = 0,02; r = 0,33



Stajanje bez smetnji i pridržavanja 10 minuta

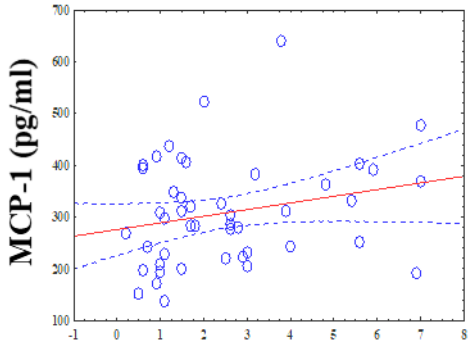
P = 0,03; r = 0,31



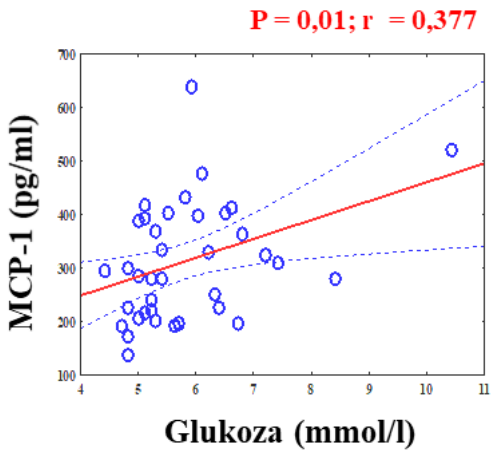
Obavljanje fizički zahtjevnih poslova

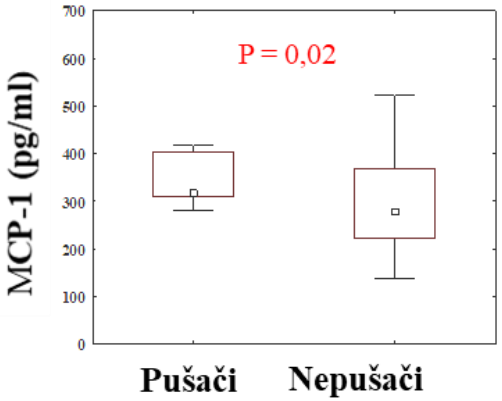
... ali nije s ukupnim izračunom BASFI ljestvice

P = 0,1; r = 0,239

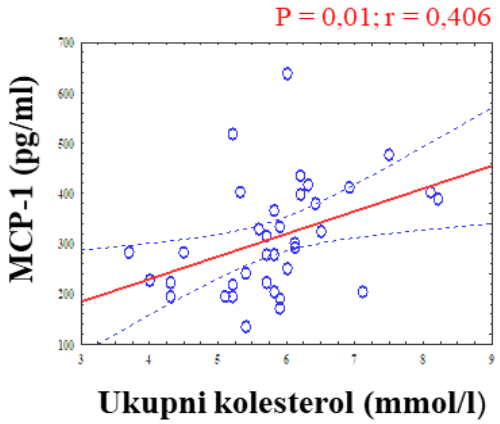


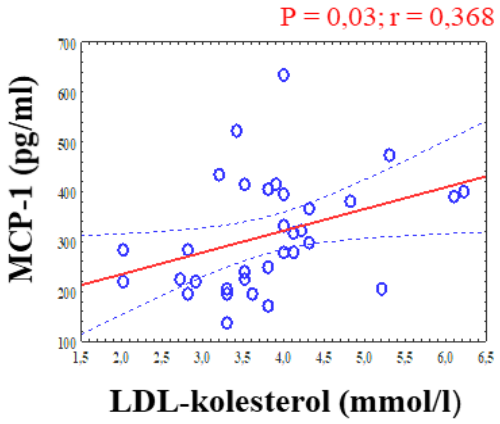
MCP-1 je u pozitivnom međuodnosu s glukozom natašte, navikom pušenja cigareta, ukupnim kolesterolom i LDL kolesterolom





▫Srednja vrijednost,
□25%-75%,
Non-Outlier Range





engl. low density lipoprotein

MCP nije u statistički značajnom međuodnosu s:

- opsegom struka
- indeksom tjelesne mase
- dobi
- spolom
- HDL kolesterolom
- trigliceridima
- sistoličkim krvnim tlakom
- dijastoličkim krvnim tlakom
- pulsom
- tlakom pulsa

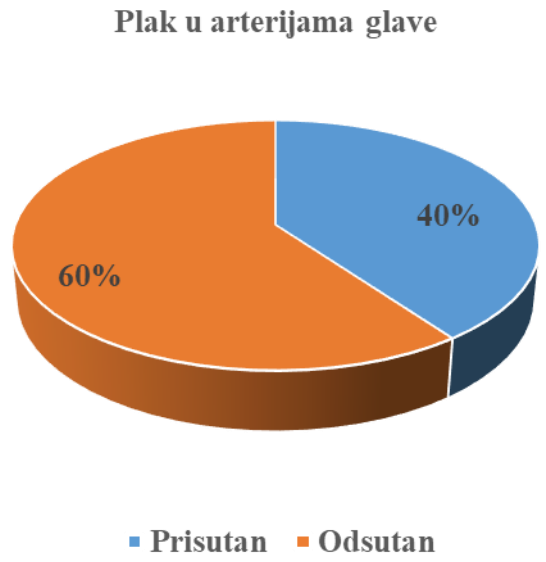
Međuovisnost BASFI i njezinih sastavnica, koje nisu u međuovisnosti s koncentracijom MCP-1, i klasičnih čimbenika kardiovaskularnog rizika

		FRS (%)	Glukoza (mmol/l)	Ukupni kolesterol (mmol/l)	LDL (mmol/l)	HDL (mmol/l)	Tg (mmol/l)	Sistolički KT (mmHg)	Dijastolički KT (mmHg)	Tlak pulsa (mmHg)	Puls (min)	ITM (kg/m²)
BASFI	P	**0.005**	0.81	**0.03**	**0.001**	**0.04**	0.61	0.08	0.62	**0.01**	**0.00**	**0.006**
	r	**0.42**	0.03	**0.3**	**0.45**	**-0.29**	0.07	0.23	0.007	**0.32**	**0.43**	**0.34**
Oblačenje čarapa	P	0.07	0.70	0.15	**0.02**	0.28	0.9	0.64	0.69	0.72	**0.02**	**0.003**
	r	0.31	-0.07	0.24	**0.39**	-0.31	0..19	0.07	0.06	0.04	**0.33**	**0.31**
Podizanje predmeta s poda	P	**0.02**	0.82	**0.02**	**0.00**	0.08	0.82	0.07	0.78	**0.05**	**0.00**	0.09
	r	**0.5**	-0.04	**0.39**	**0.58**	-0.31	-0.04	0.27	0.04	**0.28**	**0.42**	0.24
Dohvaćanje predmeta	P	**0.03**	0.79	**0.02**	**0.00**	0.07	0.79	0.33	0.48	0.5	**0.00**	0.07
	r	**0.37**	-0.05	**0.37**	**0.53**	-0.34	-0.05	0.14	0.1	0.09	**0.51**	0.25
Uspinjanje po stepenicama	P	**0.03**	0.78	**0.04**	**0.00**	**0.05**	0.78	0.11	0.98	0.06	**0.00**	**0.001**
	r	**0.37**	0.04	**0.34**	**0.48**	**-0.34**	0.04	0.24	-0.0	0.28	**0.42**	**0.44**
Gledanje preko ramena	P	**0.00**	0.62	**0.00**	**0.00**	**0.03**	0.62	0.28	0.51	0.44	**0.00**	0.19
	r	**0.48**	-0.08	**0.48**	**0.63**	**-0.36**	-0.08	0.16	0.1	0.11	**0.52**	0.19
Obavljanje cjelodnevnog posla	P	**0.05**	0.68	**0.05**	**0.01**	**0.03**	0.68	0.11	0.91	0.08	**0.001**	**0.009**
	r	**0.33**	0.06	**0.32**	**0.42**	**-0.38**	0.06	0.28	0.01	0.26	**0.45**	**0.37**

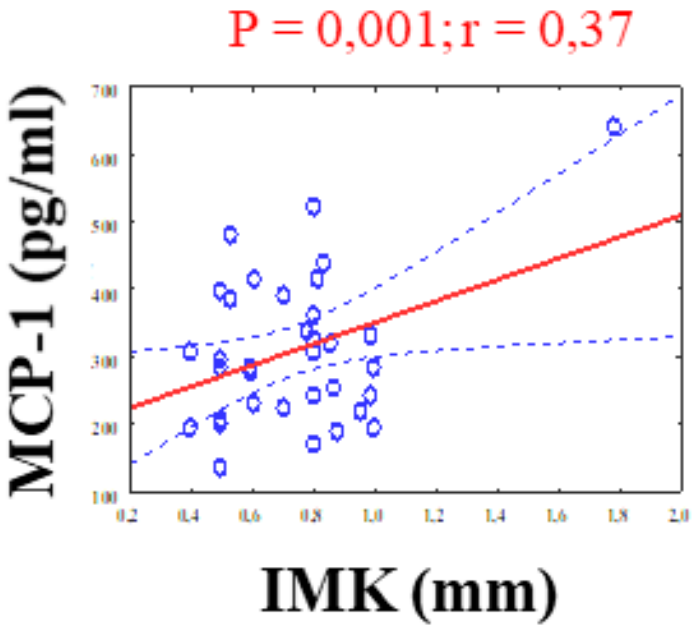
FRS - Framingham Risk Scor; LDL kolesterol - Low Density Lipoprotein; HDL kolesterol - High Density Lipoprotein ; Tg – trigliceridi; KT - krvni tlak; ITM - indeks tjelesne mase; BASFI - Bath Ankylosing Spondylitis Functional Indeks.

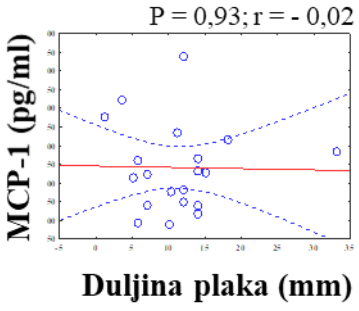
Promjene karotidnih arterija

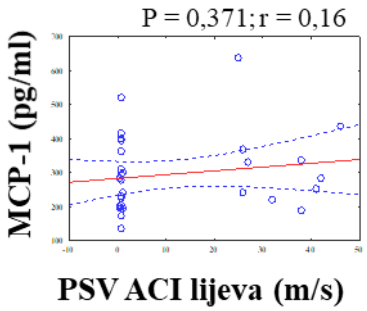
Plak karotidnih arterija prisutan je u 60% bolesnika s PsA

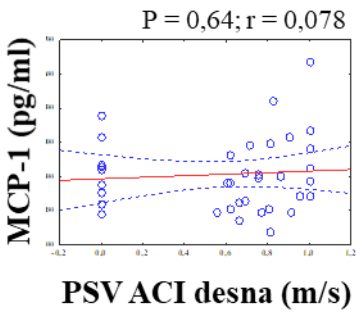


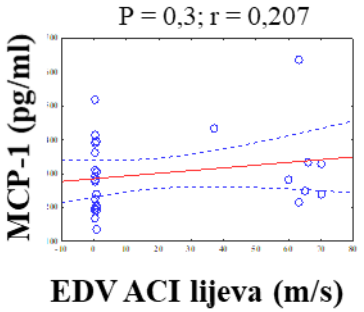
MCP-1 je u pozitivnom međuodnosu s intima media kompleksa (IMK)

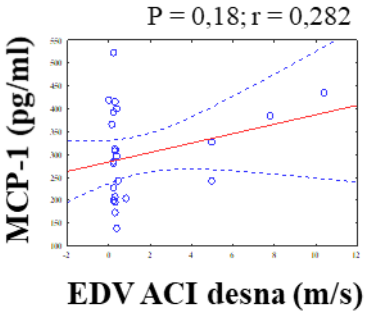










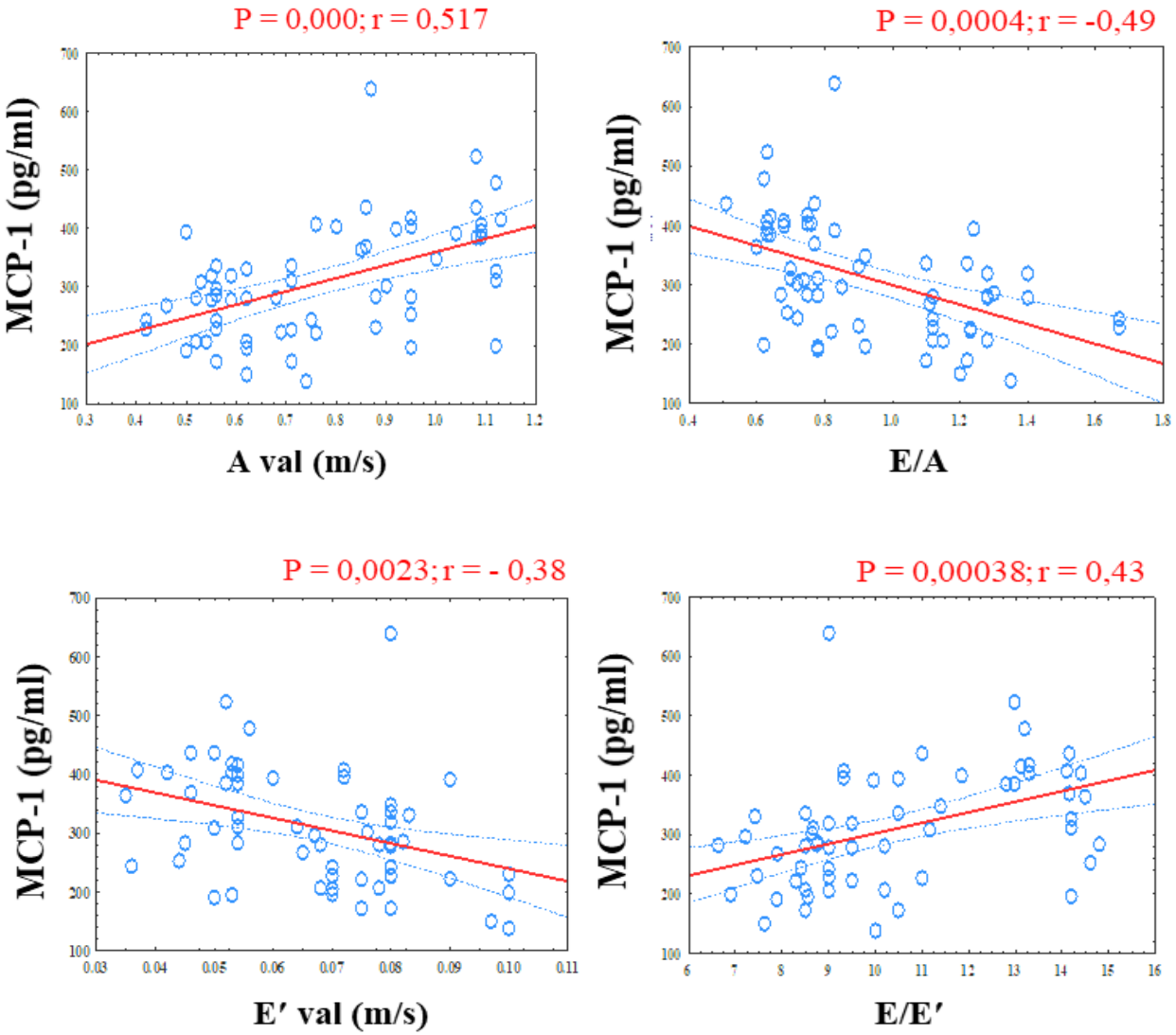


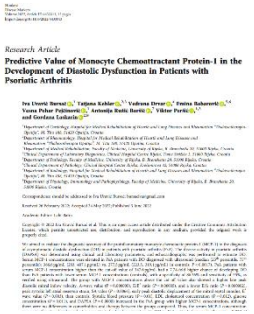
Usporedba ehokardiografskih parametara u bolesnika s PsA

	Medijan (25.;75. percentila) Zdravi ispitanici	Medijan (25.;75. percentila) PsA	P vrijednost
E val (m/s)	**0,75 (0,65; 0,85)**	**0,68 (0,62; 0,76)**	**0,032**
A val (m/s)	0,7 (0,57; 0,77)	0,74 (0,56; 0,95)	0,14
E/A omjer	**1,12 (0,85; 1,33)**	**0,83 (0,71; 1,21)**	**0,007**
LAVI (ml/m²)	25 (22,2; 26,3)	26 (22,28; 29,43)	0,50
TR brzina (m/s)	**1,65 (1,4; 2,2)**	**1,9 (1,6; 2,45)**	**0,05**
E′ val (m/s)	**0,1 (0,07; 0,1)**	**0,07 (0,05; 0,08)**	**0,000**
E/E′ ratio	**8,9 (7,5; 10,7)**	**9,5 (8,65; 22,28)**	0,09
SA (%)	27,45 (25; 34)	26 (23,16; 31,5)	0,14
Sr E (1/s)	-1,39 (-1,79; -0,85)	-1,1 (-1,52; -0,84)	0,40
Sr A (1/s)	-1,44 (-2,14; -1,26)	-1,43 (-1,79; -1,23)	0,45
EF (%)	**60 (55,75; 60)**	**55 (55; 60)**	**0,01**
GLS (%)	**-22 (-23,3; -20,8)**	**-21 (-22,3; -19,45)**	**0,012**

E val *- rana vršna dijastolička brzina mitralnog priljeva;*
A val *- kasna vršna dijastolička brzina mitralnog priljeva;*
LAVI *- volumen lijeve pretklijetke koji je indeksiran prema BSA (body surface area);*
TR *- maksimalna brzina trikuspidalne regurgitacije;*
E' *- vršno rano dijastoličko pomicanje anulusa mitralnog septum;*
SA (Atrial strain) *- naprezanje pretklijetke u fazi sistole;*
SrE (Strain rate) *- stupnj naprezanja pretklijetke u jedinici vremena u ranoj fazi dijastole i kasnoj fazi dijastole –* ***SrA****;*
EF (Ejection Fraction) *- sistlička funkcija lijeve klijetke;*
GLS (Global longitudinal strain) *- globalno sistoličko longitudinalno naprezanje;*
PsA – psorijatični arititis

Međuodnos MCP-1 i parametara dijastoličke funkcije





Research Article

Predictive Value of Monocyte Chemoattractant Protein-1 in the Development of Diastolic Dysfunction in Patients with Psoriatic Arthritis

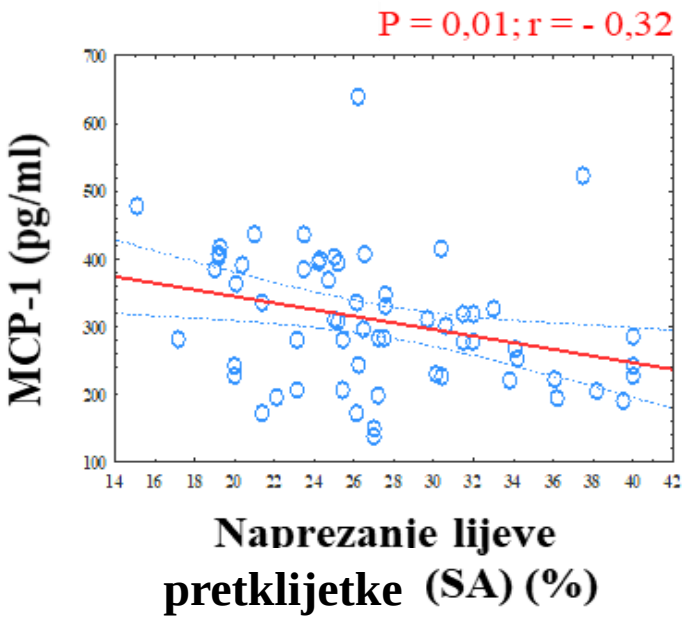
MCP-1 je u statistički značajnom

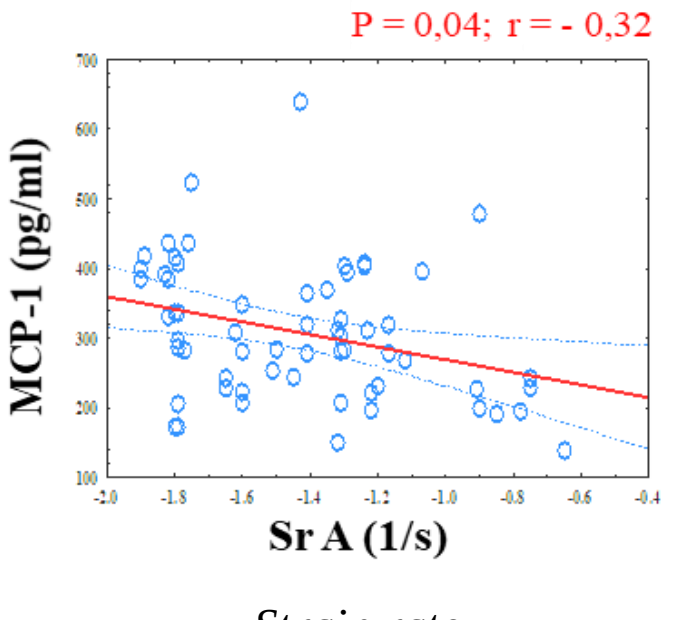
- pozitivnom međuodnosu s kasnom vršnom dijastoličkom brzinom mitralnog priljeva (A val)
- negativnom međuodnosu s
  - omjerom E/A
  - vršnim ranim dijastoličkim pomicanjem anulusa mitralnog septuma, E′
- pozitivnom međuodnosu s omjerom E/E′

Research Article

Predictive Value of Monocyte Chemoattractant Protein-1 in the Development of Diastolic Dysfunction in Patients with Psoriatic Arthritis

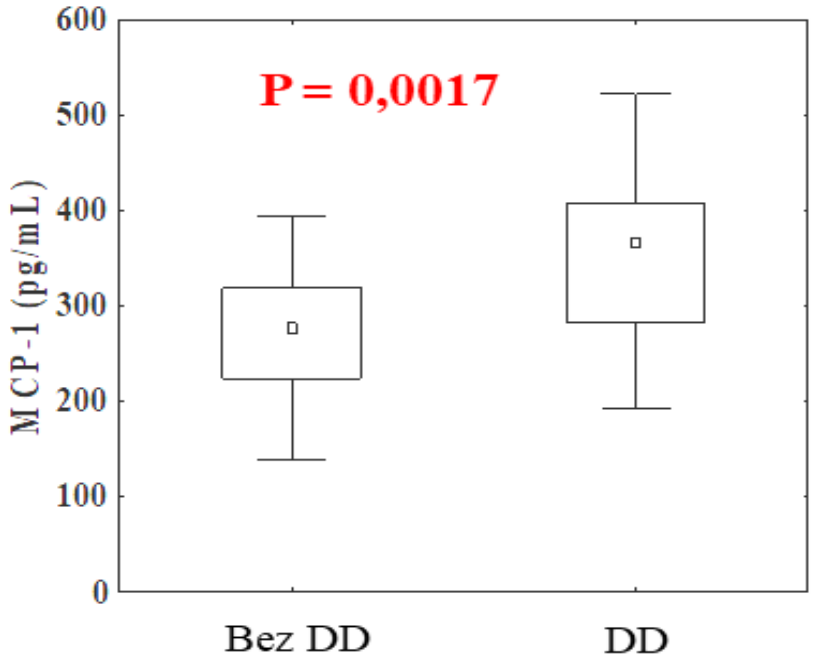
MCP-1 je u negativnom međuodnosu s naprezanjem lijeve pretklijetke u fazi sistole i stupnjem naprezanja pretklijetke u jedinici vremena u kasnoj fazi dijastole - SrA



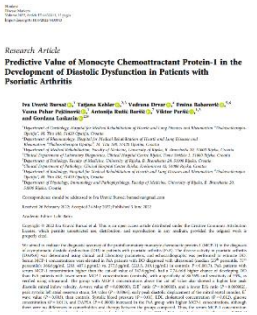


Strain rate

MCP-1 je u višoj koncentraciji u bolesnika s dijastoličkom disfunkcijom



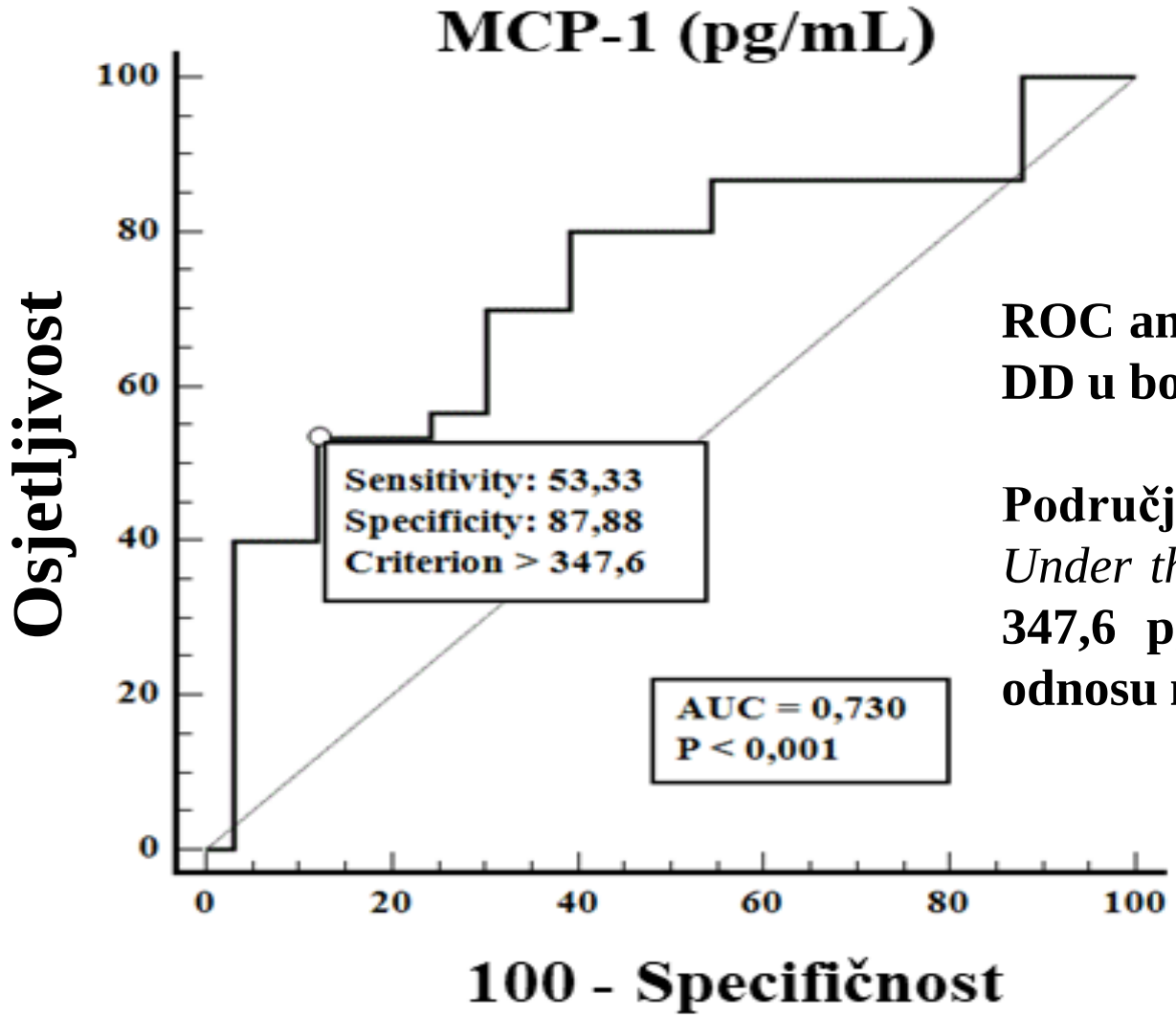
▫Srednja vrijednost, □25%-75%, Non-Outlier Range



Research Article

Predictive Value of Monocyte Chemoattractant Protein-1 in the Development of Diastolic Dysfunction in Patients with Psoriatic Arthritis

MCP-1 ima prediktivnu vrijednost u razvoju dijastoličke disfunkcije u bolesnika s psorijatičnim artritisom



ROC analiza dijagnostičke točnosti MCP-1 za DD u bolesnika s psorijatičnim artritisom.

Područje ispod krivulje *(engl. AUC - Area Under the Curve)* **za koncentraciju MCP-1 od 347,6 pg/mL za dijagnozu DD (n = 20) u odnosu na PsA bez DD (n = 43).**

Usporedba ehokardiografskih parametara u bolesnika s psorijatičnim artritisom u ovisnosti o graničnoj vrijednosti koncentracije MCP-1 u serumu (347.6 pg/mL)

	Bolesnici s koncentracijom MCP-1 ≤ 347,6 pg/mL (n=43) Medijan (25.; 75. percentila)	Bolesnici s koncentracijom MCP-1 > 347,6 pg/mL (n=20) Medijan (25.;75. percentila)	P vrijednost
E val (m/s)	0,7 (0,62; 0,78)	0,67 (0,63; 0,71)	0,452
A val (m/s)	**0,62 (0,56; 0,75)**	**0,99 (0,86; 1,08)**	**0,000005***
E/A omjer	**1,11 (0,78; 1,25)**	**0,68 (0,63; 0,77)**	**0,000002***
LAVI (ml/m^2)	25,25 (22,92; 29,93)	26,9 (21,99; 29,32)	0,844
TR brzina (m/s)	1,99 (1,57; 2,45)	2,01 (1,76; 2,46)	0,747
E′ (m/s)	**0,076 (0,066; 0,08)**	**0,05 (0,049; 0,063)**	**0,003***
E/E′ omjer	**9 (8,5; 10,2)**	**12,98 (10,36; 13,5)**	**0,00005***
SA (%)	**27,6 (25,44; 33,4)**	**23,5 (19,9; 25,04)**	**0,0066***
Sr E (1/s)	-1,22 (-1,61; -0,92)	-1,02 (-1,31; -0,78)	0,228
Sr A (1/s)	**-1,41 (-1,65; -1,21)**	**-1,75 (-1,8; -1,3)**	0,09
EF (%)	55 (55; 60)	55 (54; 60)	0,46
GLS (%)	-21 (-22,6; -19,7)	-20,3 (-21,8; -19)	0,37

MCP-1 *- Monocyte Chemoattractant Protein-1;*
E val *- rana vršna dijastolička brzina mitralnog priljeva;*
A val *- kasna vršna dijastolička brzina mitralnog priljeva;*
LAVI *- volumen lijeve pretklijetke koji je indeksiran prema BSA (engl. body surface area);*
TR *- maksimalna brzina trikuspidalne regurgitacije;*
E' *- vršno rano dijastoličko pomicanje anulusa mitralnog septum;*
SA *(Atrial Strain) - naprezanje pretklijetke u fazi sistole;*
SrE *(Strain rate) - stupnj naprezanja pretklijetke u jedinici vremena u ranoj fazi dijastole i kasnoj fazi dijastole –* ***SrA****;*
EF *- Ejection Fraction;*
GLS *- Global longitudinal strain.*

Kliničke i laboratorijske karakteristike bolesnika s PsA koji su podjeljeni u grupe prema graničnoj koncentraciji MCP-1 u serumu za dijagnozu DD

Kliničke karakteristike i laboratorijski parametri	Bolesnici s koncentracijom MCP-1 ≤ 347,6 pg/mL (n=43) Medijan 25.; 75. percentila	Bolesnici s koncentracijom MCP-1 > 347,6 pg/mL (n=20) Medijan 25.; 75. percentila	P vrijednost
BASDAI	3,1 (1,05; 3,94)	4 (2,7; 4,95)	0,236[a]
BASFI	1,75 (1,1; 2,8)	2 (1,35; 5,6)	0,19[a]
DAPSA	**10,6 (8,3; 18,5)**	**18,45 (11,77; 32,35)**	**0,0000[a]**
BSA (%)	0,25 (0; 1)	0 (0; 2)	0,572[a]
ITM (kg/m ^{2})	**26,9 (25,65; 29,9)**	**30,3 (27,15; 33,8)**	0,082[a]
Diastolički KT (mmHg)	85 (77,25; 92,75)	89,5 (80; 100)	0,1[a]
Sistolički KT (mmHg)	**129,5 (102; 180)**	**150 (128,75; 159,25)**	**0,01[a]**
CRP (mg/l)	1,2 (0,8; 2,8)	1,65 (0,95; 9,1)	0,249[a]
Glukoza (mmol/l)	**5,2 (4,9; 5,65)**	**5,8 (5,3; 6,5)**	**0,011[a]**
LDL-kolesterol (mmol/l)	**3,7 (3; 4,1)**	**4 (3,57; 5,17)**	**0,012[a]**
NT pro-BNP (pmol/l)	60 (35; 136)	57 (42; 62,25)	0,803[a]
MCP-1 (pg/l)	**267,7 (214,2; 299,2)**	**404,1 (391; 422,9)**	**0,00063[a]**
Dob (g)	61 (54; 64)	62 (55,75; 67,25)	0,478[a]
Komorbiditeti i terapija (n)			
Šećerna bolest	4	3	0,503[b]
KT	21	14	0,115[b]
Pušenje cigareta	7	6	0,210[b]
sDMARD	**13**	**7**	0,705[b]
TNF inhibitor	13	10	0,129[b]
NSAR	17	3	0,058[b]
ACE inhibitor	8	7	0,155[b]
Beta blokator	11	9	0,123[b]

MCP-1 - Monocyte Chemoattractant Protein-1;
BASDAI - Bath Ankylosing Spondylitis Disease Activity Indeks;
BASFI - Bath Ankylosing Spondylitis Functional Index;
DAPSA - Disease Activity in Psoriatic Arthritis;
BSA - Body Surface Area;
ITM - Indeks tjelesne mase;
KT - krvni tlak;
NYHA - New York Heart Association Classification;
LDL - Low Density Lipoprotein;
NT proBNP - N-terminal pro-Brain Natriuretic Peptide;
sDMARD - synthetic Disease-Modifying Antirheumatic Drugs;
TNF - Tumor necrosis factor;
NSAR - Non-Steroid Antirheumatics;
ACE - Angiotensin-converting enzyme.

Zaključci

Koncentracija MCP-1 značajan je i neovisan dijagnostički čimbenik asimptomatske DD u bolesnika s PsA, sa specifičnošću od 87,88% i osjetljivošću od 55%

Bursać IU, Kehler T, Drvar V i sur..
Predictive Value of Monocyte Chemoattractant Protein-1 in the Development of Diastolic Dysfunction in Patients with Psoriatic Arthritis.
Dis Markers. 2022 Jun 3;2022:4433313

MCP-1 je u pozitivnom međuodnosu s više klasičnih KV čimbenika rizika (glukoza, ukupni kolesterol, LDL-kolesterol i puls)

Više klasičnih KV čimbenika rizika (glukoza, ukupni kolesterol, LDL-kolesterol i puls) je u pozitivnom međuodnosu s parametrima aktivnosti bolesti (DAPSA i BBZ) te pojedinim komponentama BASFI

Parametri aktivnosti bolesti (DAPSA i BBZ) te pojedine komponente BASFI su u značajnom međuodnosu s MCP-1

ZAKLJUČAK

Kako bolesniku pružiti potpunu zaštitu?...

OD UTJECAJA NA **JEDAN**
FAKTOR RIZIKA
DO LIJEČENJA I UTJECAJA NA
SVE FAKTORE KV RIZIKA

Individualizirana prevencija KVB

ESC European Society of Cardiology
European Heart Journal (2021) **42**, 3227–3337
doi:10.1093/eurheartj/ehab484

ESC GUIDELINES

2021 ESC Guidelines on cardiovascular disease prevention in clinical practice

Developed by the Task Force for cardiovascular disease prevention in clinical practice with representatives of the European Society of Cardiology and 12 medical societies

With the special contribution of the European Association of Preventive Cardiology (EAPC)

Authors/Task Force Members: Frank L.J. Visseren* (Chairperson) (Netherlands), François Mach* (Chairperson) (Switzerland), Yvo M. Smulders† (Task Force Coordinator) (Netherlands), David Carballo† (Task Force Coordinator) (Switzerland), Konstantinos C. Koskinas (Switzerland), Maria Bäck (Sweden), Athanase Benetos[8] (France), Alessandro Biffi[7,10] (Italy), José-Manuel Boavida[9] (Portugal), Davide Capodanno (Italy), Bernard Cosyns (Belgium), Carolyn Crawford (Northern Ireland), Constantinos H. Davos (Greece), Ileana Desormais (France), Emanuele Di Angelantonio (United Kingdom), Oscar H. Franco (Switzerland), Sigrun Halvorsen (Norway), F. D. Richard Hobbs[13] (United Kingdom), Monika Hollander (Netherlands), Ewa A. Jankowska (Poland), Matthias Michal[11] (Germany), Simona Sacco[6] (Italy), Naveed Sattar (United Kingdom), Lale Tokgozoglu[2] (Turkey), Serena Tonstad (Norway), Konstantinos P. Tsioufis[5] (Greece), Ineke van Dis[3] (Netherlands), Isabelle C. van Gelder (Netherlands), Christoph Wanner[4] (Germany), Bryan Williams (United Kingdom), ESC Scientific Document Group

* Corresponding authors: The two chairpersons contributed equally to the document. Frank Visseren, Department of Vascular Medicine, University Medical Center Utrecht, Heidelberglaan 100, 3584 CX Utrecht, Netherlands. Tel: +31 (0)88 7557324, E-mail: F.L.J.Visseren@umcutrecht.nl. François Mach, Cardiology Department, Geneva University Hospital, Perret-Gentil 4, 1211 Geneva, Switzerland. Tel: +41 (0)22 372 71 92, E-mail: francois.mach@hcuge.ch. † The two task force coordinators contributed equally to the document.

Author/Task Force Member affiliations: listed in Author information.

ESC Clinical Practice Guidelines Committee (CPG): listed in the Appendix.

ESC subspecialty communities having participated in the development of this document. Associations: Association of Cardiovascular Nursing & Allied Professions (ACNAP), European Association of Cardiovascular Imaging (EACVI), European Association of Preventive Cardiology (EAPC), European Heart Rhythm Association (EHRA), Heart Failure Association (HFA). **Councils:** Council for Cardiology Practice, Council on Hypertension. **Working Groups:** Aorta and Peripheral Vascular Diseases, Atherosclerosis and Vascular Biology, Cardiovascular Pharmacotherapy.