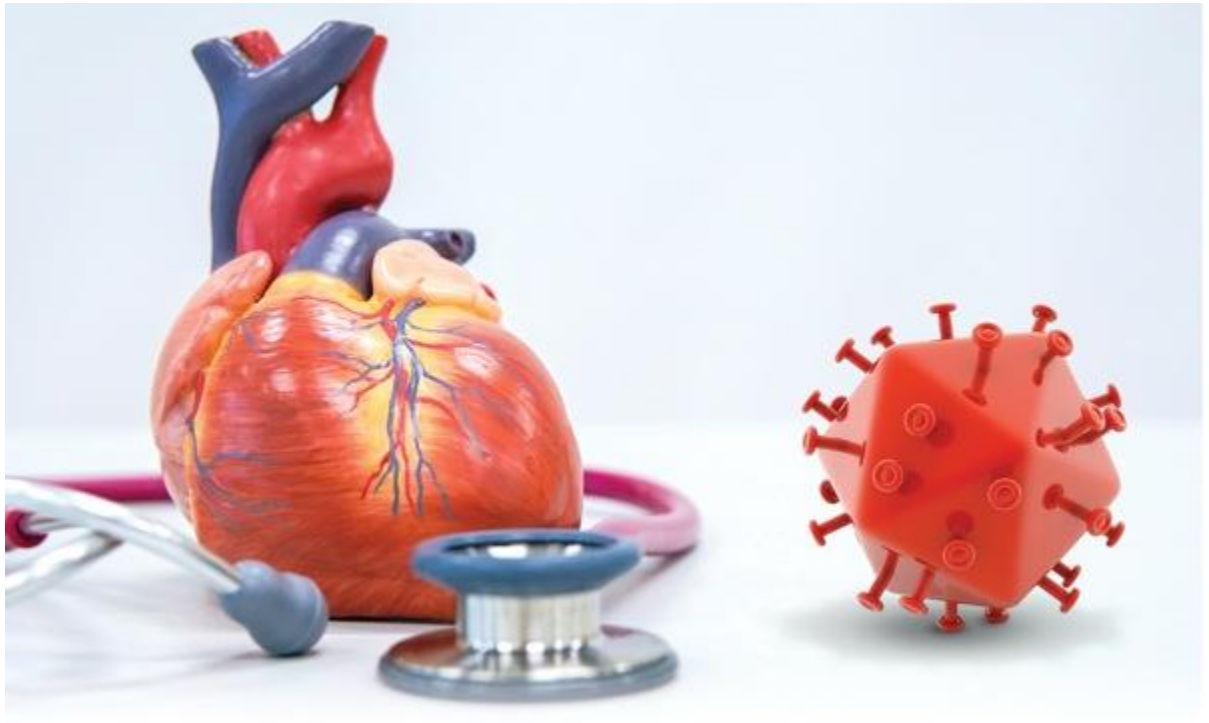


HIV ve Komorbiditeler
Kardiyovasküler Sağlık

Dr. Salih Atakan NEMLİ
İzmir Katip Çelebi Üniversitesi Tıp Fakültesi
Enfeksiyon Hastalıkları AD

Olgu

- 48 yaşında, ESE
- **Öykü**
- Partnerinde AHIV+ saptanması üzerine tarama yapılmış
- **Özgeçmiş**
- Ek hastalık yok
- Sigara 2-3 pk/gün, 30 pk.yılı
- Baba KAH ve AMI nedeniyle eks.

Laboratuvar

- Kre: 0,94 mg/dL
- GFR: 106
- T.kol 273 mg/dL
- HDL: 53 mg/dL
- TG: 307 mg/dL
- HIV-RNA: 337.000 IU/mL
- CD4 %18, 372 hc/mm^3
- HBV naiv

Results

☆ Save Copy Results

Estimated 10-year Global CVD Risk

13.2%

Risk Category

Moderate Risk

Estimated Vascular Age

60 Years

https://qxmd.com/calculate/calculator_252/framingham-risk-score-2008

Published in final edited form as:

Curr HIV/AIDS Rep. 2021 August ; 18(4): 271–279. doi:10.1007/s11904-021-00567-w.

Assessing Cardiovascular Risk in People Living with HIV: Current Tools and Limitations

Amit C. Achhra[1], **Asya Lyass**[2], **Leila Borowsky**[3], **Milana Bogorodskaya**[4], **Jorge Plutzky**[5], **Joseph M. Massaro**[2], **Ralph B. D'Agostino Sr.**[2], **Virginia A. Triant**[1,3]

[1]Division of Infectious Diseases, Massachusetts General Hospital, Boston, Massachusetts

[2]Department of Mathematics and Statistics, Boston University, Boston, Massachusetts

[3]Division of General Internal Medicine, Massachusetts General Hospital, Boston, Massachusetts

[4]Division of Infectious Diseases, MetroHealth, Case Western Reserve University School of Medicine, Cleveland, Ohio

[5]Division of Cardiology, Brigham and Women's Hospital, Boston, Massachusetts

Model	Source population	Mean age (years)	Females	Black race	Current or former smoker	Risk factors	Predicted outcome
Framingham Heart Study (FHS)- CVD[21]	US adults from the Framingham Heart Study Original and Offspring Cohorts (Framingham, MA, US)	49	50%	<10%	35%	Age, SBP, BP Rx, smoking, total cholesterol, HDL-C, diabetes (sex-specific estimates)	Composite CHD (coronary death, MI, coronary insufficiency, angina), cerebrovascular events (stroke, TIA), PAD, heart failure
ACC/AHA Pooled Cohort equations (PCE)[19]	US adults from 4 cohorts	40-70 (variable by cohort)	56%	21%	24-30%	Age, SBP, BP Rx, smoking, total cholesterol, HDL-C, diabetes (sex- and race-specific estimates)	MI, fatal or nonfatal stroke, CHD death
Systematic COronary Risk Evaluation (SCORE) high-risk Equation (SCORE)[24]	Adults from 12 European countries	Variable by cohort	43%	Not reported	20-40% in women, 40-60% in men	Age, sex, SBP, smoking, total cholesterol	CHD death, fatal stroke

Model	Source population	Mean age (years)	Females	Black race	Current or former smoker	Risk factors	Predicted outcome
Data Collection on Adverse Effects of Antiretroviral Drugs (D:A:D) Study model[35]	HIV-infected adults from clinics in the U.S., Europe, Argentina, and Australia	39	26%	Not reported	69%	Age, sex, SBP, smoking, total cholesterol, diabetes, ever smoke, family history of CVD, CD4 count, years of use of PIs and NRTIs, current abacavir use	Composite CVD (fatal or nonfatal MI including sudden death, stroke, TIA, invasive coronary artery procedures including CABG, angioplasty, death from other CHD)

Published in final edited form as:
Curr HIV/AIDS Rep. 2021 August ; 18(4): 271–279. doi:10.1007/s11904-021-00567-w.

Assessing Cardiovascular Risk in People Living with HIV: Current Tools and Limitations

- HYB'lerde, bu modeller, ***genç yaş, kadın, siyah ırk*** veya ***düşük/orta risk altında olduğu tahmin edilen bireylerde*** genellikle KVH riskini hesaplamada yetersiz kalabilir
- ***D:A:D***,HIV'e özgü bir skorlama sistemi, ancak performansı ABD merkezli kohortlarda orta derecede başarılı
- İnflamasyonun veya koroner arter kalsifikasyonunun yeni biyobelirteçleri ile KVH arasındaki ilişki konusunda HYB'lerde yeterli çalışma yok

Tedavi seçimi?

Initial Combination Regimen for ART-naïve Adult HIV-positive Persons

A) Recommended regimens (one of the following to be selected)[*,**]

Regimen	Dosing	Caution	Food requirement
2 NRTIs + INSTI			
ABC/3TC/DTG[f,g]	ABC/3TC/DTG 600/300/50 mg, 1 tablet qd	Al/Ca/Mg-containing antacids or multivitamins should be taken well separated in time (minimum 2h after or 6h before). DTG 50 mg bid with rifampicin.	None
TAF/FTC[g,k] or TDF/FTC[f,k] + DTG	TAF/FTC 25/200 mg, 1 tablet qd or TDF/FTC 300/200 mg, 1 tablet qd + DTG 50 mg, 1 tablet qd		None
TAF/FTC/EVG/c[g,k] or TDF/FTC/EVG/c[f,g,k]	TAF/FTC/EVG/c 10/200/150/150 mg, 1 tablet qd or TDF/FTC/EVG/c 300/200/150/150 mg, 1 tablet qd	Al/Ca/Mg-containing antacids or multivitamins should be taken well separated in time (minimum 2h after or 6h before).	With food
TAF/FTC[g,k] or TDF/FTC[f,k] + RAL	TAF/FTC 25/200 mg, 1 tablet qd or TDF/FTC 300/200 mg, 1 tablet qd + RAL 400 mg, 1 tablet bid	Co-administration of antacids containing Al or Mg not recommended. RAL 400 or 800 mg bid with rifampicin.	None
2 NRTIs + NNRTI			
TAF/FTC/RPV[g,k] or TDF/FTC/RPV[f,k]	TAF/FTC/RPV 25/200/25 mg, 1 tablet qd or TDF/FTC/RPV 300/200/25 mg, 1 tablet qd	Only if CD4 count > 200 cells/µL and HIV-VL < 100,000 copies/mL. PPI contraindicated; H2 antagonists to be taken 12h before or 4h after RPV.	With food
2 NRTIs + PI/r or PI/c			
TAF/FTC[g,k] or TDF/FTC[f,k] + DRV/c[n] or + DRV/r[n]	TAF/FTC 10/200 mg, 1 tablet qd or TDF/FTC 300/200 mg, 1 tablet qd DRV/c 800/150 mg, 1 tablet qd or + DRV 800 mg, 1 tablet qd + RTV 100 mg, 1 tablet qd	Monitor in persons with a known sulfonamide allergy.	With food

Sabin *et al. BMC Medicine* (2016) 14:61
DOI 10.1186/s12916-016-0588-4

BMC Medicine

RESEARCH ARTICLE Open Access

Is there continued evidence for an association between abacavir usage and myocardial infarction risk in individuals with HIV? A cohort collaboration

Caroline A. Sabin[1*], Peter Reiss[2], Lene Ryom[3], Andrew N. Phillips[1], Rainer Weber[4], Matthew Law[5], Eric Fontas[6], Amanda Mocroft[1], Stephane de Wit[7], Colette Smith[1], Francois Dabis[8], Antonella d'Arminio Monforte[9], Wafaa El-Sadr[10], and Jens D. Lundgren[3] for the D:A:D Study Group

Discussion

It is clear that there has been some reduction in the use of ABC among those at higher risk of CVD in the more recent period. In particular, since March 2008 individuals at moderate or high CVD risk have been somewhat less likely to initiate ABC as part of first-line ART regimens, and more likely to discontinue ABC compared to their counterparts with low or unknown underlying CVD risk. Despite this reduction in the use of ABC in higher risk persons, we continue to observe a strong association between current ABC use and MI risk. This association remains unchanged, even after adjustment

Yüksek riskli kişilerde ABC kullanımındaki azalmaya rağmen, mevcut ABC kullanımı ile MI riski arasında güçlü bir ilişki gözlemlemeye devam ediyoruz…

Randomized Controlled Trial > Int J Cardiol. 2018 Jul 15;263:118-124.
doi: 10.1016/j.ijcard.2018.04.052. Epub 2018 Apr 12.

Effect of aspirin treatment on abacavir–associated platelet hyperreactivity in HIV–infected patients

Emanuela Falcinelli [1], Daniela Francisci [2], Elisabetta Schiaroli [2], Pietro Minuz [3], Sara Orsini [1], Lisa Malincarne [2], Manuela Sebastiano [1], Anna Maria Mezzasoma [1], Maria Bruna Pasticci [2], Giuseppe Guglielmini [1], Franco Baldelli [2], Paolo Gresele [4]

Affiliations + expand

PMID: 29685693 DOI: 10.1016/j.ijcard.2018.04.052

Abstract

Background: Ischemic cardiovascular events are a relevant cause of morbidity and mortality in HIV-infected patients. Use of abacavir (ABC), a nucleoside analog reverse transcriptase inhibitor, has been associated with increased risk of myocardial infarction (MI) and with platelet hyperreactivity. We explored whether low-dose aspirin reduces in vivo platelet activation and platelet hyperreactivity induced by ABC in HIV-infected subjects.

- ABC, platelet hiperreaktivitesine sebep olmakta
- Düşük doz aspirin bu etkiyi azaltmakta
- Aspirinin bu etkisi sağlıklı bireylerdeki etkisinden daha az

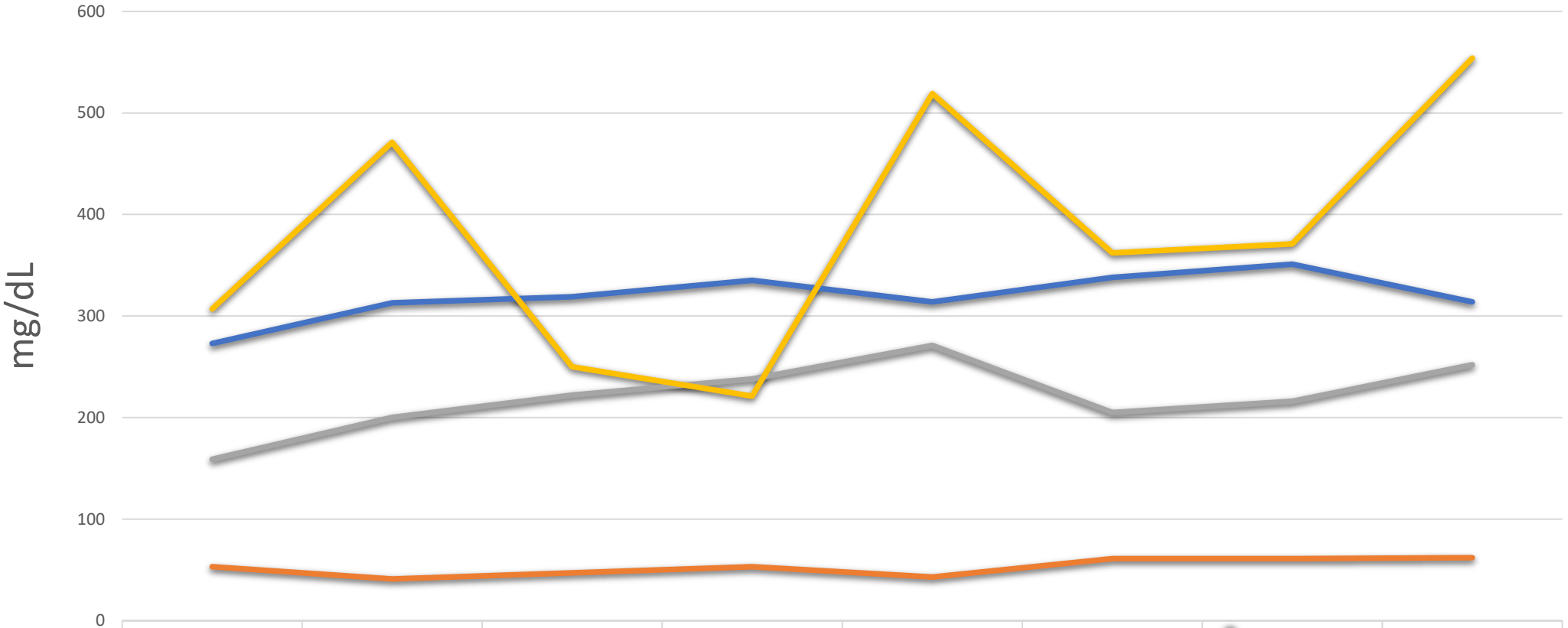
Hastaya TAF+FTC+EVGc başlanıyor

İzlem

Tarih	05/2018	07/2018	10/2018	01/2019	05/2019	07/2019	01/2020	07/2020	10/2020
HIV-RNA	337.000	211	82	<20	<20	<20	40	<40	<20
CD4	372	446	549	746	540	618	677	661	-

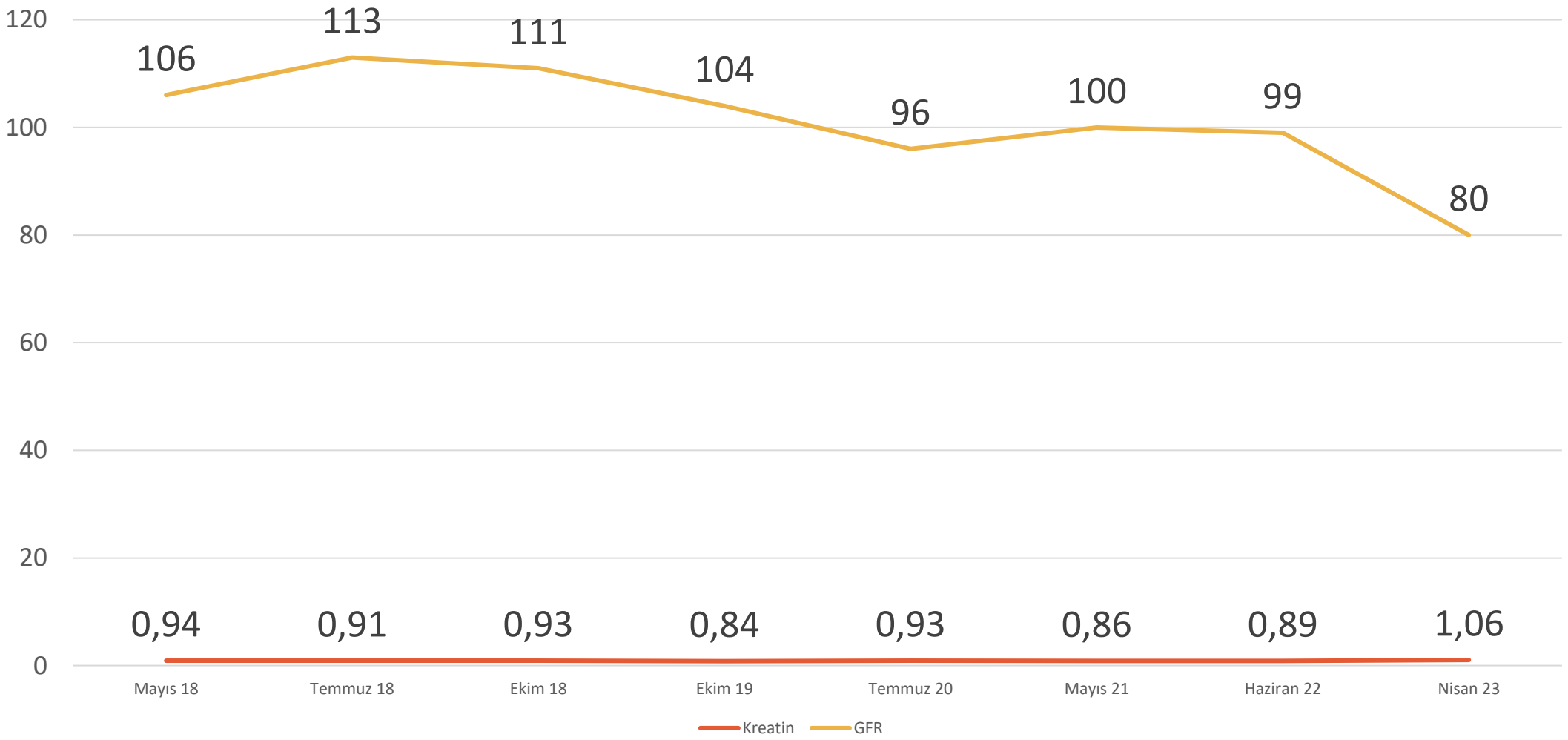
Tarih	08/2021	06/2022	08/2022	04/2023
HIV-RNA	20	25	43	<20
CD4	1263	731	731	785

Kan Lipid Düzeyleri



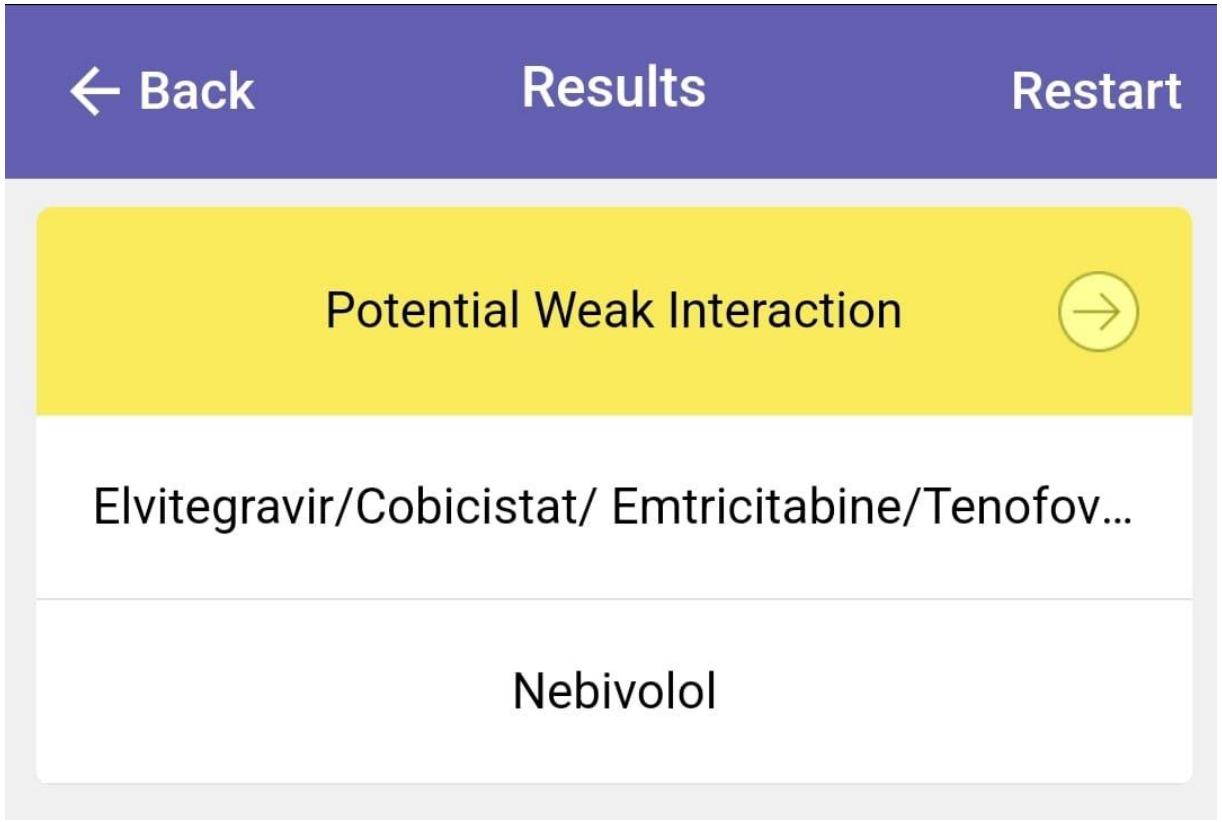
	Mayıs 18	Temmuz 18	Ekim 18	Ekim 19	Temmuz 20	Mayıs 21	Haziran 22	Nisan 23
T.kol	273	313	319	335	314	338	351	314
HDL	53	41	47	53	43	61	61	62
LDL	159	200	222	238	271	205	216	252
TG	307	471	250	221	519	362	371	554

Renal Fonksiyonlar



Ko-medikasyon

1 yıldır antihipertansif tedavi (nebivolol) alıyor



Results

☆ Save Copy Results

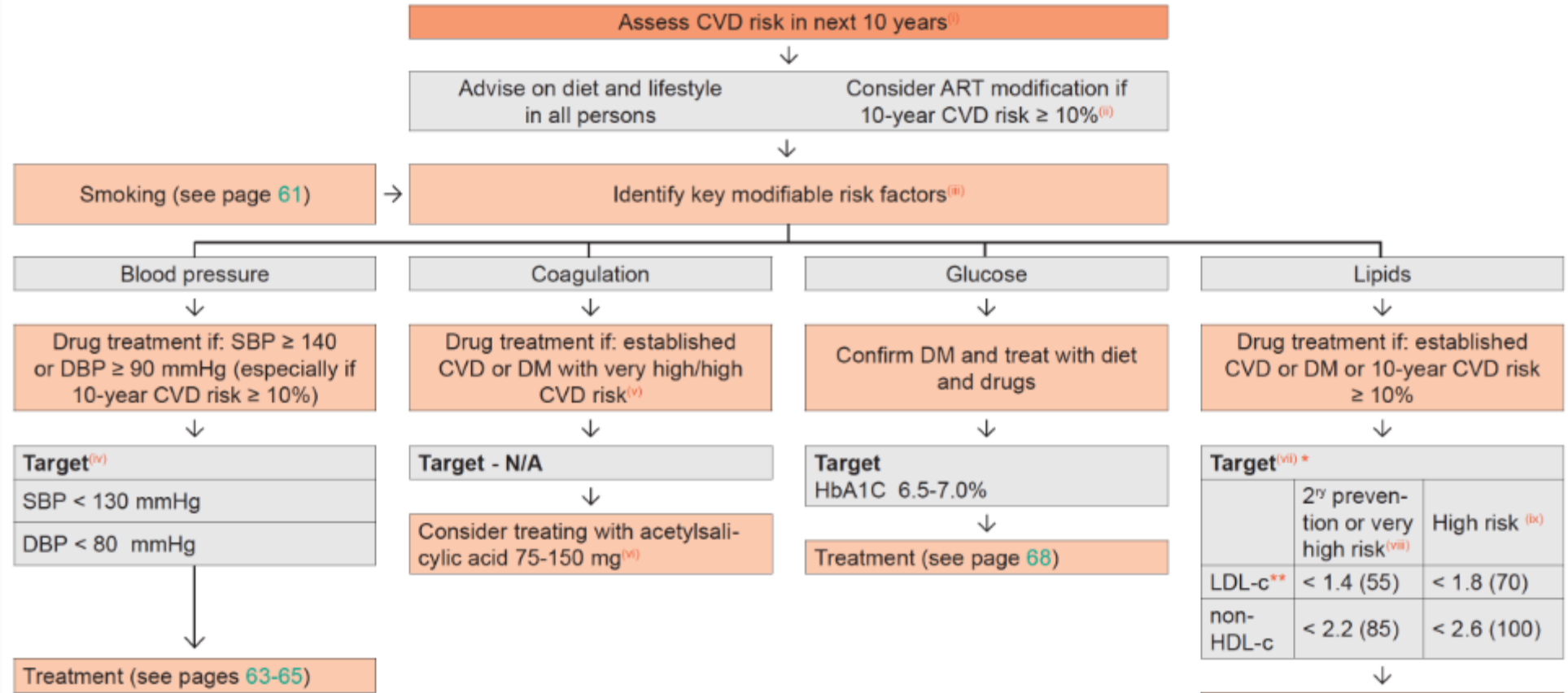
Estimated 10-year Global CVD Risk
29.4%

Risk Category
High Risk

Estimated Vascular Age
>80 Years

https://qxmd.com/calculate/calculator_252/framingham-risk-score-2008

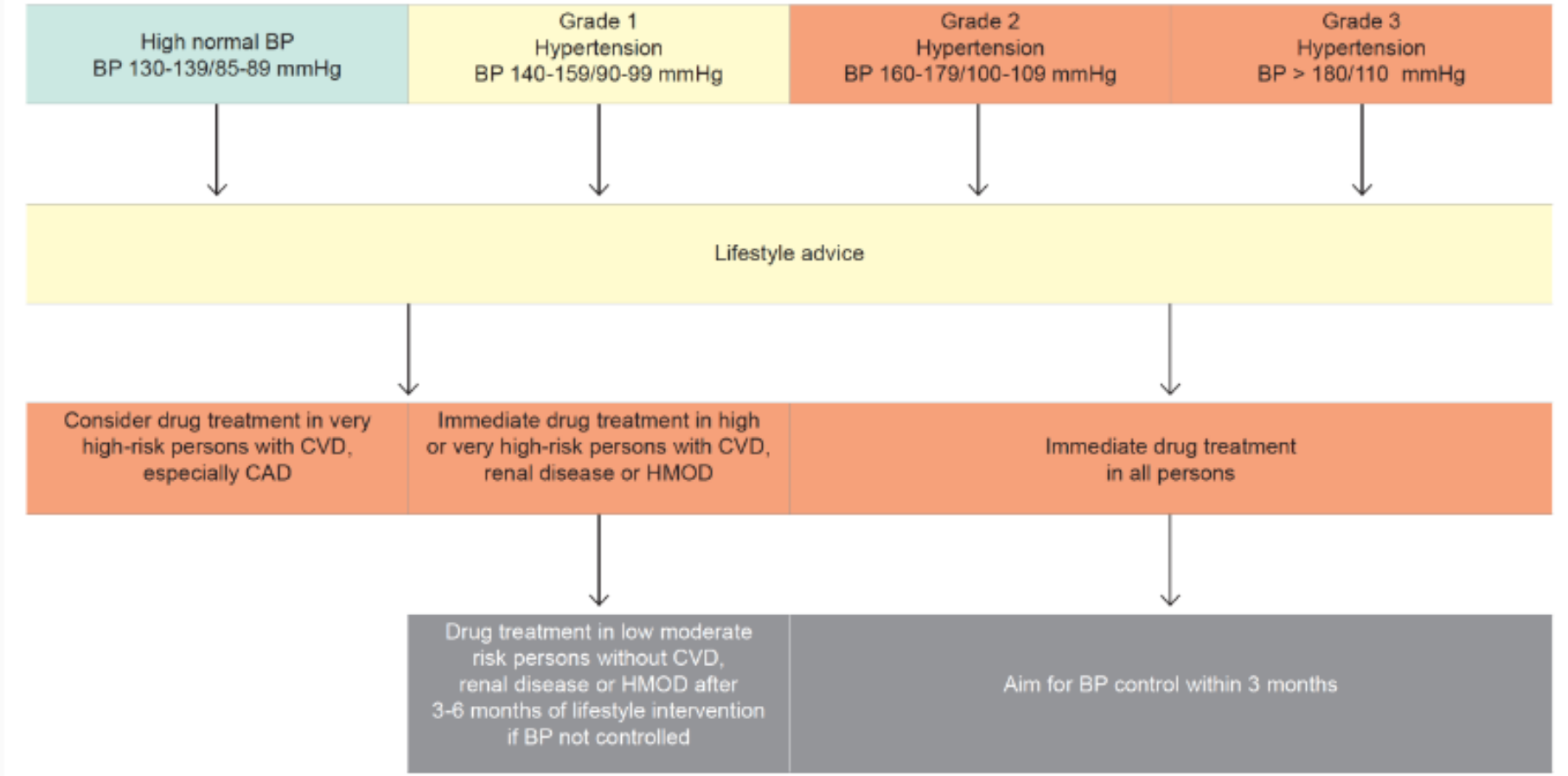
Tedavi değişim/devam?


Assess CVD risk in next 10 years(i)
Advise on diet and lifestyle in all persons
Consider ART modification if 10-year CVD risk ≥ 10%(ii)
Smoking (see page 61)
Identify key modifiable risk factors(iii)
Blood pressure
Drug treatment if: SBP ≥ 140 or DBP ≥ 90 mmHg (especially if 10-year CVD risk ≥ 10%)
Target(iv)
SBP < 130 mmHg
DBP < 80 mmHg
Treatment (see pages 63-65)
Coagulation
Drug treatment if: established CVD or DM with very high/high CVD risk(v)
Target - N/A
Consider treating with acetylsalicylic acid 75-150 mg(vi)
Glucose
Confirm DM and treat with diet and drugs
Target
HbA1C 6.5-7.0%
Treatment (see page 68)
Lipids
Drug treatment if: established CVD or DM or 10-year CVD risk ≥ 10%
Target(vii) *
2ry prevention or very high risk(viii)
High risk (ix)
LDL-c**
< 1.4 (55)
< 1.8 (70)
non-HDL-c
< 2.2 (85)
< 2.6 (100)
Treatment (see page 69)
* Fasting or non-fasting samples may be used
** and ≥ 50% reduction from baseline

Kan basıncı kontolü

Hypertension: Diagnosis, Grading & Management

Blood pressure Diagnosis, Grading and Management



Adapted from: The Task Force for the management of arterial hypertension of the European Society of Cardiology (ESC) and the European Society of Hypertension (ESH) European Heart Journal (2018) 39, 3021–3104.

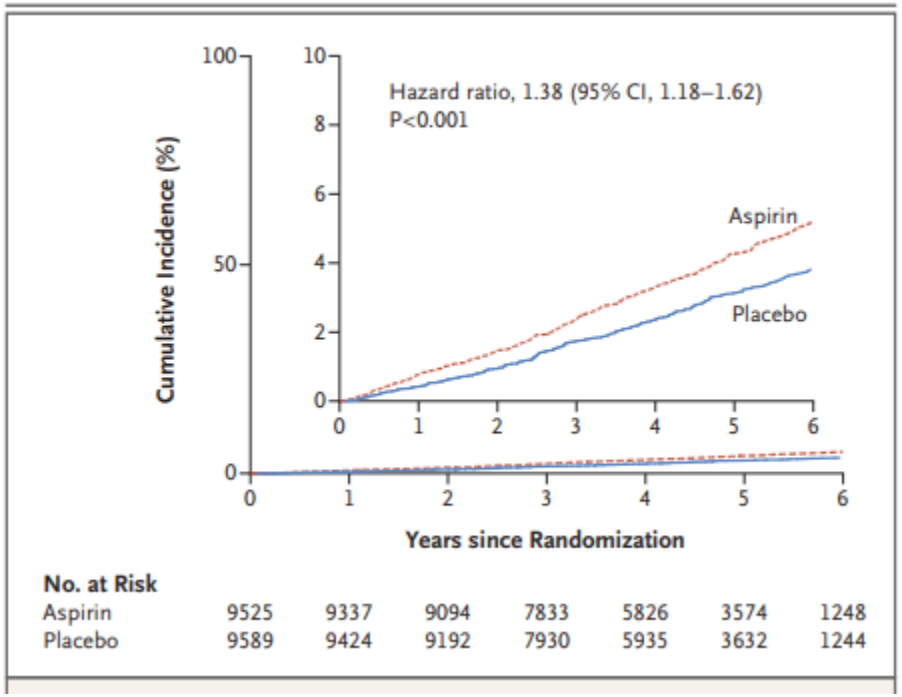
Antikoagülasyon

The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

Effect of Aspirin on All-Cause Mortality in the Healthy Elderly

J.J. McNeil, M.R. Nelson, R.L. Woods, J.E. Lockery, R. Wolfe, C.M. Reid, B. Kirpach, R.C. Shah, D.G. Ives, E. Storey, J. Ryan, A.M. Tonkin, A.B. Newman, J.D. Williamson, K.L. Margolis, M.E. Ernst, W.P. Abhayaratna, N. Stocks, S.M. Fitzgerald, S.G. Orchard, R.E. Trevaks, L.J. Beilin, G.A. Donnan, P. Gibbs, C.I. Johnston, B. Radziszewska, R. Grimm, and A.M. Murray, for the ASPREE Investigator Group*



CONCLUSIONS

The use of low-dose aspirin as a primary prevention strategy in older adults resulted in a significantly higher risk of major hemorrhage and did not result in a significantly lower risk of cardiovascular disease than placebo. (Funded by the National Institute on Aging and others; ASPREE ClinicalTrials.gov number, NCT01038583.)

History of U.S. Preventive Services Task Force Recommendations on Aspirin for Primary Prevention of Cardiovascular Disease

Year	Recommendation	Grade*
1989	Consider for middle-aged or older men (age, ≥40) with coronary risk factors and low bleeding risk	Not graded
1996	Insufficient evidence to make recommendation for asymptomatic adults	C
2002	Strongly recommend discussion of aspirin chemoprevention with adults at excess risk for coronary disease	A
2009	Recommend aspirin for middle-aged and older men (age range, 45–79) and women (age range, 55–79) when potential benefit outweighs potential harm	A
	Recommend against aspirin for middle-aged men (age, <45) and women (age, <55)	D
	Evidence insufficient for older adults (age, ≥80)	I
2016	Recommend initiating aspirin for middle-aged adults (age, 50–59) with 10-year cardiovascular risk ≥10%	B
	Individualize decision to initiate aspirin for older adults (age range, 60–69) with 10-year cardiovascular risk ≥10%	C
	Evidence insufficient for younger and older adults (age, <50 or >70)	I
2022	Individualize decision to initiate aspirin for middle-aged adults (age range, 40–59) with 10-year cardiovascular risk ≥10%	C
	Recommend against initiating aspirin in older adults (age, ≥60)	D

Dislipidemi

Drug	Adverse effect(s)
ABC	Rash Nausea* Diarrhoea* IHD *Systemic hypersensitivity syndrome (HLA B*57:01 dependent)
ZDV[ii]	Nail pigmentation Nausea Steatosis Myopathy Rhabdomyolysis **Lipoatrophy** Dyslipidaemia Hyperlactataemia Anaemia
3TC	
FTC	
TDF[iii]	Hepatitis ↓ BMD Osteomalacia ↑ Fractures risk ↓ **eGFR** Fanconi syndrome
TAF[iii]	**Weight gain**

NNRTIs

Drug	Adverse effects(s)
EFV	Rash Hepatitis **Neuropsychiatric events including:** **depression, sleep disturbance, headache** **Dyslipidaemia** Gynaecomastia ↓ **Plasma 25 (OH) vitamin D**
ETV	Rash
NVP	Rash* Hepatitis* *Systemic hypersensitivity (CD4 count and gender dependent)
RPV	Rash Hepatitis ↓ eGFR[iv] Depression Sleep disturbance Headache
DOR	Sleep disturbance Headache

PIs

Drug	Adverse Effect(s)
ATV[v]	**Nausea and Diarrhoea**[vii] **Hyperbilirubinaemia** Jaundice Cholelithiasis ↓ eGFR Nephrolithiasis Dyslipidaemia
DRV[v]	Rash **Nausea and Diarrhoea**[vii] IHD Nephrolithiasis Dyslipidaemia
LPV	**Nausea and Diarrhoea**[vii] IHD ↓ eGFR **Dyslipidaemia**

Boosting

Drug	Adverse Effect(s)
RTV	**Nausea and diarrhoea** **↓ eGFR**[(iv)] **Dyslipidaemia**
COBI	**Nausea and diarrhoea** **↓ eGFR**[(iv)] Dyslipidaemia

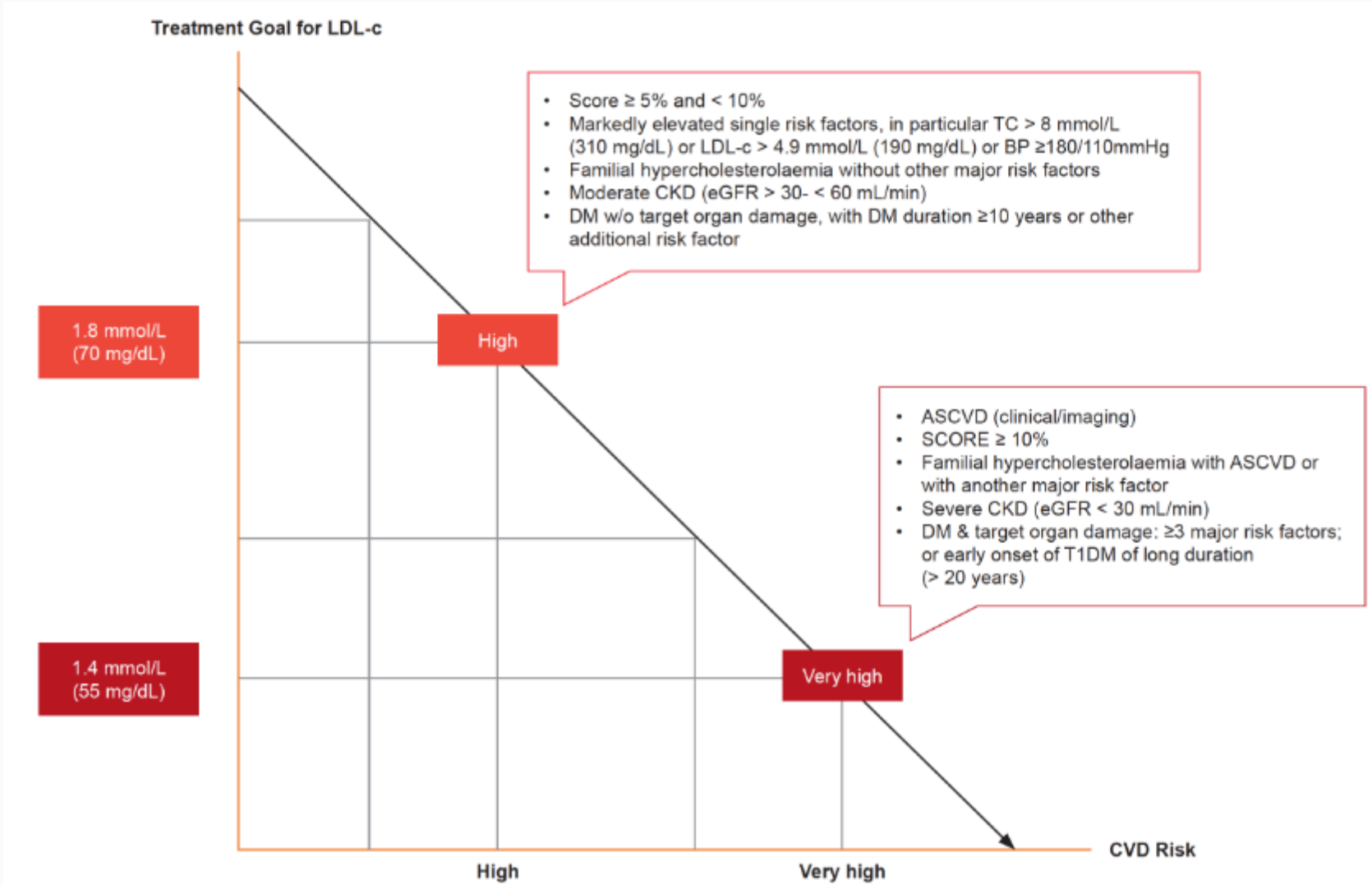
INSTI

Drug	Side effect(s)
RAL	Nausea Myopathy Rhabdomyolysis Sleep disturbance Headache **Weight gain** Systemic hypersensitivity syndrome[viii]
DTG	Rash Nausea ↓ eGFR[iv] **Sleep disturbance** **Headache** **Weight gain** Systemic hypersensitivity syndrome (<1%) Minimal non-significant increase in neural tube defects[ix]
EVG/c	**Nausea** Diarrhoea ↓ **eGFR**[iv] Sleep disturbance Headache **Weight gain**
BIC	↓ eGFR[iv] Sleep disturbance Headache **Weight gain**
CAB	Injection site reactions[x] Sleep disturbance Headache Pyrexia[xi]

Drugs used to lower LDL-c

Drug class	Drug	Dose	Adverse effects	Advice on use of lipid lowering therapy together with ART	
				use with PI/r	use with NNRTIs
Statin[i,viii]	atorvastatin[ii]	10-80 mg qd	Gastrointestinal symptoms, headache, insomnia, rhabdomyolysis (rare) and toxic hepatitis	Start with low dose[v] (max daily dose: 10 mg (ATV/r); 20 mg (LPV/r); 40 mg (DRV/r)	Consider higher dose[vi]
	fluvastatin[iii]	20-80 mg qd		Consider higher dose[vi]	Consider higher dose[vi]
	pravastatin[iii]	20-80 mg qd		Consider higher dose[vi,vii]	Consider higher dose[vi]
	rosuvastatin[ii]	5-40 mg qd		Start with low dose[v] (max daily dose: 10 mg (ATV/r, LPV/r) 20 mg (DRV/r)	Start with low dose[v]
	simvastatin[ii]	10-40 mg qd		Contraindicated	
	pitavastatin[viii]	1-4 mg qd		No interaction expected	
Intestinal cholesterol absorption inhibitor↓[i,viii]	ezetimibe[iv]	10 mg qd	Gastrointestinal symptoms	No interaction expected	
PCSK9-inhibitors[x]	evolocumab	140 mg 2 weekly or 420 mg monthly	Nil	No interaction expected	
	alirocumab	75 mg or 150 mg 2 weekly			

Treatment Goals for LDL-c for Very High and High CVD Risk Persons



HIV MEDICINE
BHIVA British HIV Association

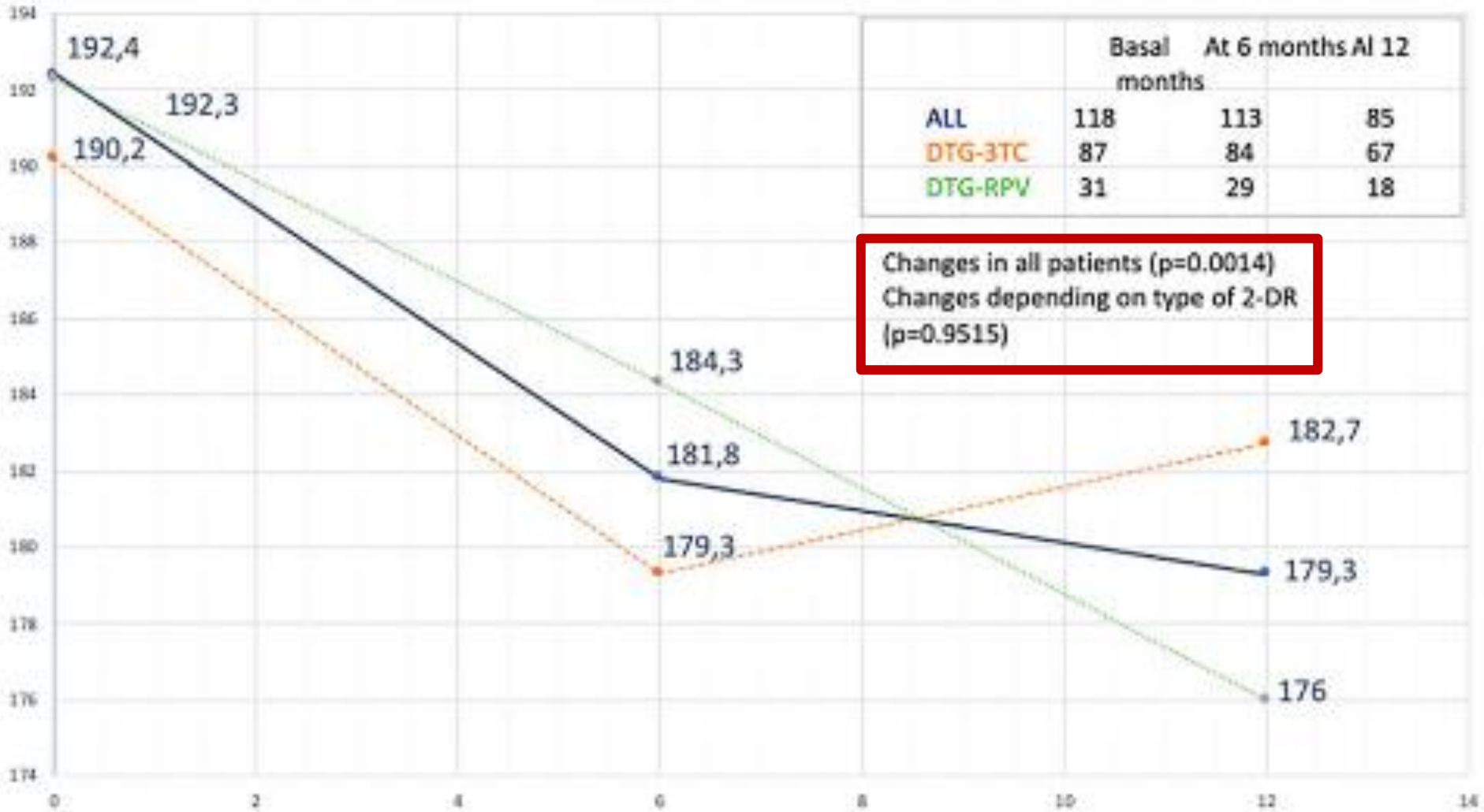
ORIGINAL ARTICLE

Change in metabolic parameters after switching from triple regimens with tenofovir alafenamide to dolutegravir-based dual therapy. Bi-lipid study

Alejandro D. Bendala-Estrada, Mariana Diaz-Almiron, Carmen Busca, Rafael Mican, Julen Cadiñanos, Maria Luisa Montes, Luz Martin-Carbonero, Eulalia Valencia, Rocío Montejano, Ana Delgado-Hierro, Jose I. Bernardino ... See fewer authors

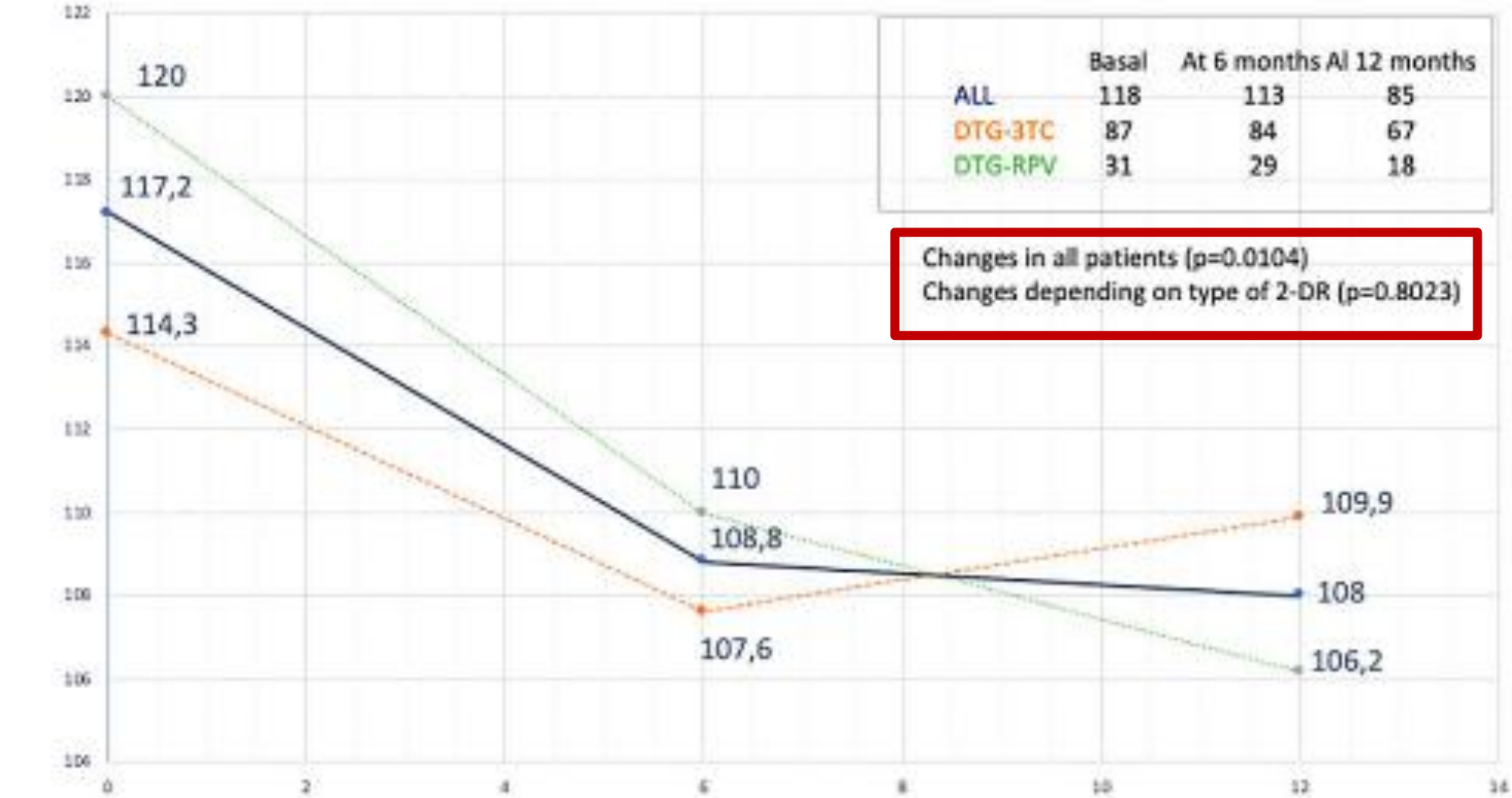
First published: 16 November 2022 | https://doi.org/10.1111/hiv.13432

T. kolesterol



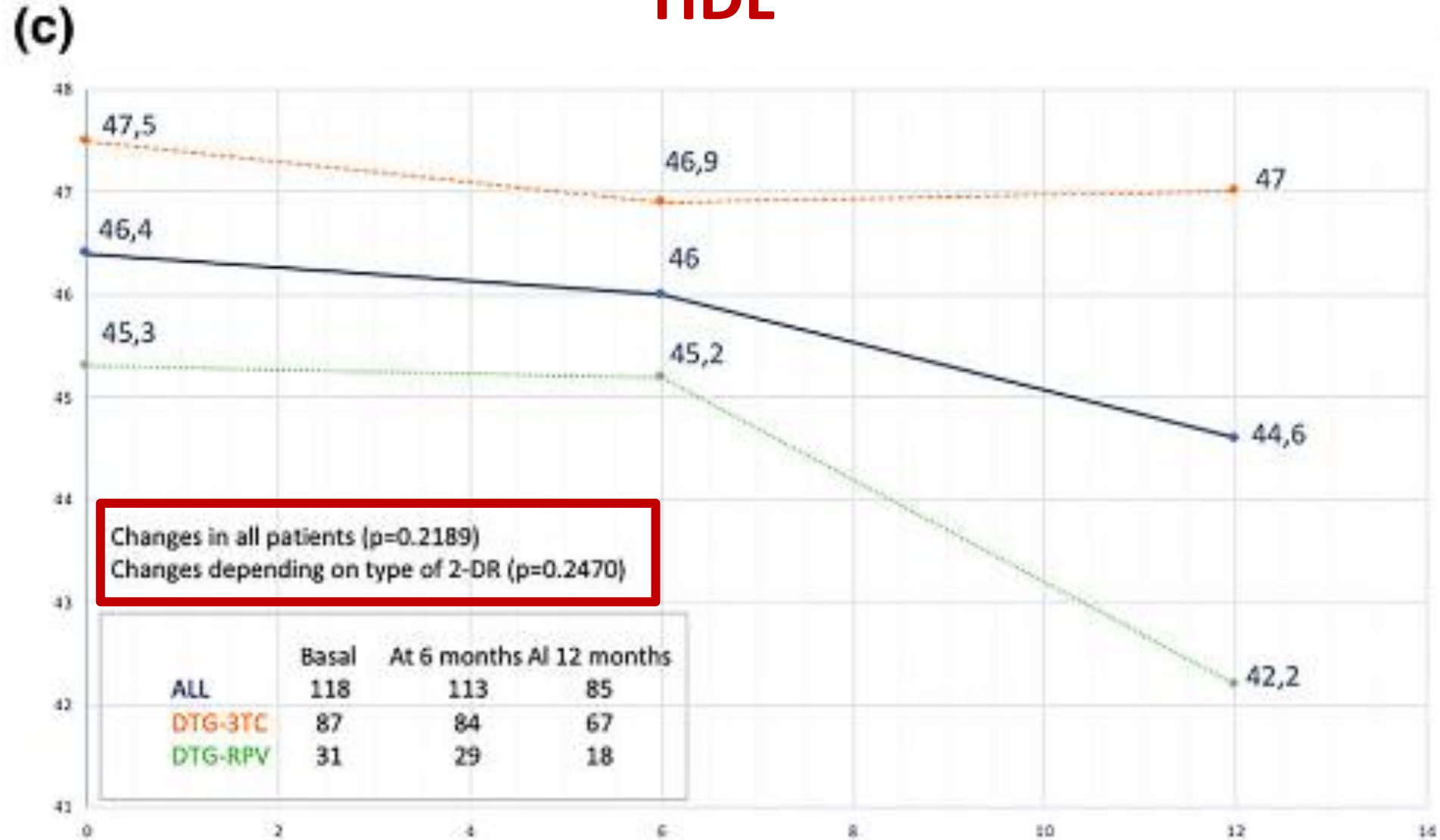
Bendala-Estrada et al. HIV Med.2023;24:558–567

LDL



Bendala-Estrada et al. HIV Med.2023;24:558–567

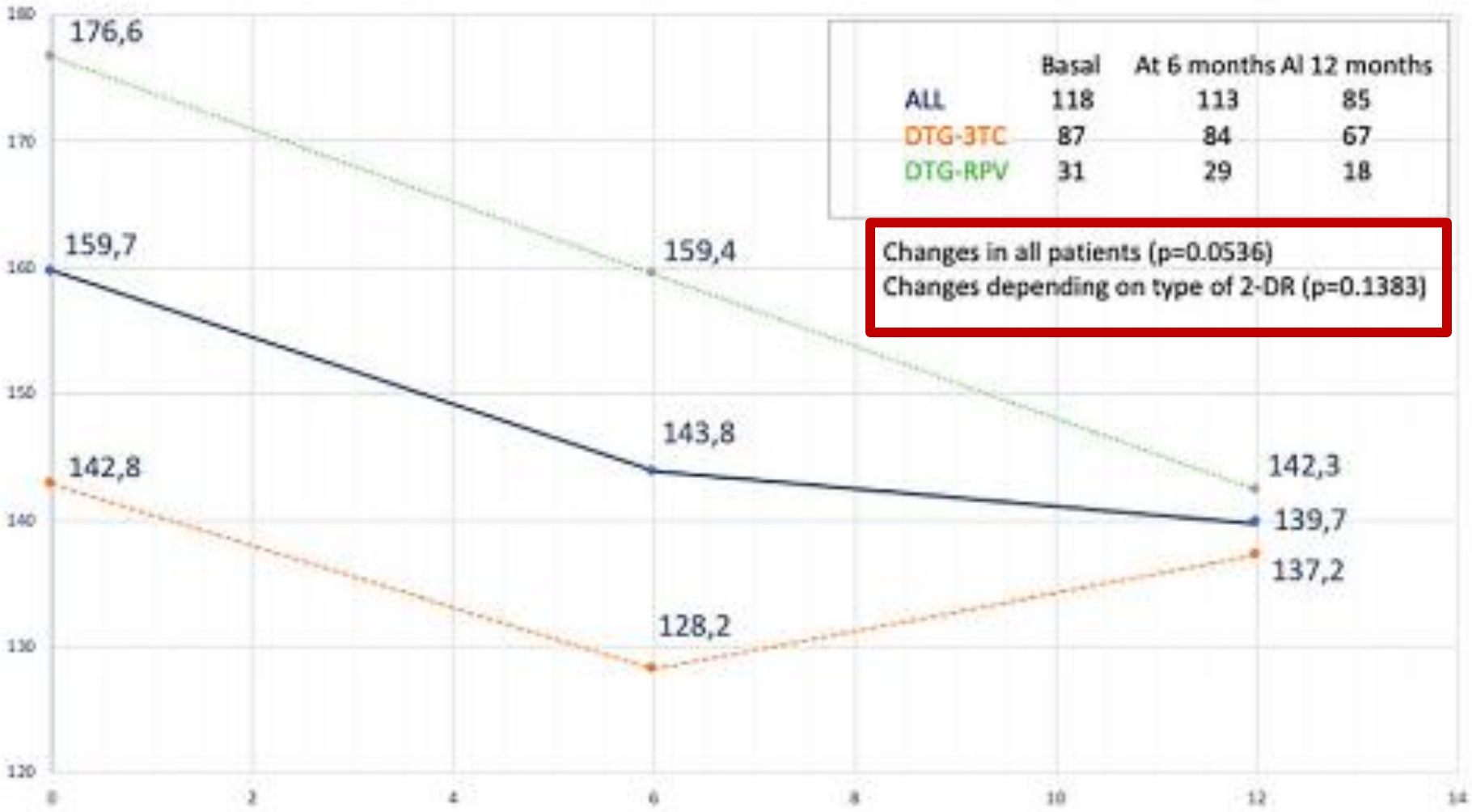
HDL



Bendala-Estrada et al. HIV Med.2023;24:558–567

TG

(d)



Bendala-Estrada et al. HIV Med.2023;24:558–567

We observed a statistically significant reduction in the estimated cardiovascular risk measured by the Framingham-REGICOR equation, from 4.5% at baseline to 4% at 12 months in the total sample ($p = 0.040$).

Bendala-Estrada et al. HIV Med.2023;24:558–567

Tedavi DTG+3TC olarak modifiye ediliyor

Eve gidecek mesajlar …

- HIV, KVH için bağımsız bir risk faktörü
- Viral supresyon ve immun durumun optimizasyonunun, KV sağlığa olumlu etkisi olmakla birlikte, risk yine de artmıştır
- Kilo alımı, dislipidemi gibi risk faktörlerinin kontrolü
- Uygun ART başlanması ve gerektiğinde modifikasyon
- Kr. inflamasyon gibi henüz müdahale edemediğimiz faktörler için yeni gelişmelere ihtiyaç var


Teşekkürler ...