Prevalence of cardiovascular disease (CVD) and comparison of risk category predictions of Systemic Coronary Risk Evaluation Score-2 (SCORE2) and four other CVD risk calculators among people living with HIV (PLWH) in Türkiye


Objective
CVD is a major cause of mortality among PLWH.1 Data on agreement between the commonly used risk estimation equations in Türkiye are limited. We aimed to determine prevalence of CVD risk and agreement between risk estimation equations in Türkiye.

Methods
This retrospective cross-sectional study included adult PLWH with a follow-up visit between October 2019-2021 in 20 tertiary centers. Inclusion criteria were age 40-75 years, receiving ART (reverse transcriptase inhibitors, protease inhibitors, non-nucleoside reverse transcriptase inhibitors, CCR5 antagonists, integrase inhibitors), elevated lipids, serum creatinine ≥1.5 mg/dL and/or hypertension, 18.3% obesity, 17% diabetes mellitus and 7.2% family history of early-onset CVD. Of 1425 PLWH, 1132 were eligible to assess CVD risk-scores. The study was approved by the Ethics Committee of the Ministry of Health.

Results
A total of 1425 PLWH were included in this study. Baseline characteristics of PLWH are shown in Table 1. Of 1425 PLWH (82.7% male), 151 had a confirmed CVD (10.6%). Median (IQR) age was 51 (45-58) years. Prevalence of CVD risk factors were: 45.7% current smoking, 34.9% hyperlipidemia, 29.5% hypertension, 17.4% obesity, 17% diabetes mellitus and 7.2% family history of early-onset CVD. 45.7% current smoking, 34.9% hyperlipidemia, 29.5% hypertension, 17.4% obesity, 17% diabetes mellitus and 7.2% family history of early-onset CVD. Of 1425 PLWH, 1132 were eligible to assess CVD risk-scores. Risk strata distributions are displayed in the Table 2. According to the 2020 European14 and American15 guidelines, 75.3% and 47.1% of PLWH would be eligible for lipid-lowering agents, respectively. The FRS-CVD, Mod-FRS, DAD-reduced and SCORE2 had an overall agreement of 82%, 94%, 91% and 36% compared with ASCVD (Table 3). The multivariate logistic regression analysis, besides several traditional risk factors, low CD4 count in CAD, housing, and education in ASCVD and DAD were positively associated with CVD. However, no HIV specific parameter was associated with a higher SCORE2 CVD risk (Table 4).

Conclusions
We found moderate agreement among CVD risk prediction tools evaluated in this study, except for SCORE2 which attributed a considerably higher CVD risk in 71.7% of PLWH. Whether those scores can be reliably estimated at population level needs further evaluation. CVD risk among PLWH in Türkiye might be underestimated; therefore close-monitoring of CVD risk is warranted. Furthermore, the potential impact of ARVs on CVD risk factors and strategies to reduce critical risk, such as initiation of lipid-lowering agents should be strongly considered.

References