Undetectable HIV viral load is associated with a lower incidence of atherosclerotic cardiovascular events in HIV/HCV co-infected patients

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Background: Several studies highlighted an increased risk of cardiovascular disease (CVD) in HIV-HCV co-infected patients without clearly identifying specific virologic risk factors for atherosclerotic CVD (ASCVD). Therefore, we analyzed data collection from the French multicenter nationwide cohort HEPAVIH to determine the incidence of ASCVD in HIV-HCV co-infected patients and their specific virologic risk factors.

Materials/methods: The French nationwide ANRS CO13 HEPAVIH clinic-based cohort collected prospective clinical and biological data from HIV-HCV co-infected patients followed-up in 32 different university hospitals. After a follow-up over one year, 1213 HIV-HCV co-infected patients were included.

Primary outcome was occurrence of total ASCVD events, split in major (cardiovascular death, acute coronary syndrome, percutaneous coronary intervention, coronary arterial bypass grafting and ischemic stroke) and minor (symptomatic peripheral arterial disease requiring revascularization or documented with ultrasound showing > 50% intraluminal stenosis). Incidence rates were estimated using Aalen-Johansen method and ASCVD risk factors were identified with Cox proportional hazards models.

Results: Baseline characteristics identified a median age of 45.4 years [42.1-49.0], 70.3% men, current smoking (70.2%), overweight (18%), liver cirrhosis (8.9%), chronic alcohol consumption (7.8%), diabetes (5.9%), personal history of CVD (2.7%). Statins were used in 4%.

After a median follow-up of 5.1 years [3.9-7.0], 46 ASCVD events occurred (26 majors, 20 minors) with incidences of 7.18 [5.19; 9.38], 4.01 [2.78; 6.00], 3.17 [2.05; 4.92] per 1000 person-years, respectively. Two patients experienced both major and minor ASCVD.

Multivariable analysis identified personal history of CVD (Hazard Ratio (HR)=13.94 [4.25-45.66]) and total cholesterol (HR=1.63 [1.24-2.15]) as associated with a higher incidence of major ASCVD events whereas HDL cholesterol (HR=0.08 [0.02-0.34]) and undetectable HIV viral load (HR=0.41 [0.18-0.96]) were associated with a lower incidence. Cirrhosis, liver fibrosis and HCV sustained viral response were not associated with any ASCVD events.

Conclusions: HIV-HCV co-infected patients experienced a high incidence of ASCVD events. They were associated with traditional ASCVD risk factors. Undetectable HIV viral load was associated with a lower incidence of major ASCVD.