Iron overload, an immunosuppression marker in HIV-infected patients

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Purpose
Iron overload (IO) has been associated with increased cardiovascular risk (CVR) and metabolic syndrome (MS) in the general population; both elevated CVR and MS are frequent in HIV-patients. Our aim was to analyze the prevalence of IO in a cohort of asymptomatic patients with HIV infection, and related factors.

Methods
Cross-sectional study of a cohort of HIV outpatients in regular follow-up. Demographic, epidemiological, clinical, analytical and therapeutic data were collected. Patients completed a questionnaire about CVR factors and 10-year CV disease risk estimation (Framingham score), underwent a physical exam, and a fasting blood analysis. IO was defined as a plasma ferritin level higher than 200 μg/L in women and 300 μg/L in men.

Results
571 patients (446 men, 125 women), with a mean age of 43.2 years, sexual transmission of HIV in 68.5%, median CD4 count 474 cell/μL (IQR: 308–666), and 36.3% Aids cases. 86.2% were on antiretroviral therapy (ART), and 74.8% of them had undetectable HIV viral load. 14.6% met MS criteria, and mean CVR at 10 years was 6.67%. IO was detected in 11% of cases. Patients with IO were more immunosuppressed (CD4 count 369 vs 483/μL, p < 0.0001), presented a higher prevalence of detectable HIV viral load (17.6% vs 8.9%; p < 0.005), and of Aids cases (14.9% vs 8.7%; p < 0.023), and lower plasma levels of cholesterol, HDLc and LDLc (154 vs 183, 34 vs 43, 93 vs 110 mg/dL, respectively; p < 0.0001. In the multivariate analysis, the only related factor was CD4 count < 350 cell/μL (OR 2.86, 95% CI 1.6–4.9; p < 0.0001). IO was not associated with CVR nor with MS.

Conclusions
IO is not uncommon in HIV patients, and it is only related with immunosuppression defined as CD4 count < 350 cell/μL, and in contrast to general population, it is not related with increased CVR nor with MS.