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Metabolic complications of highly active antiretroviral therapy in adult HIV-infected patients with heart failure: A 7-year prospective cohort study

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Abstract

Long-term metabolic complications of highly active antiretroviral therapy (HAART) have been reported in general human immunodeficiency virus (HIV)-infected patients. We sought to determine whether patients with pre-existing heart failure (HF) using HAART are at high risk of subsequent metabolic syndrome (MetS) and cardiovascular complications, compared with HIV-infected patients without pre-existing HF. This is a prospective cohort study of 5 years of follow-up, in which 172 HIV-infected patients were recruited for the comparison of Data Collection on Adverse Effects of Anti-HIV Drugs (D:A:D), a cardiovascular disease (CVD) risk score for HAART, and lab data, between HF patients and age- and gender-matched non-HF patients. HAART was effective for both HIV-infected patients with or without HF, with a similar plasma viral load (PVL) of HIV ($r=0.001$, $P=0.69$) and CD4 count for HF patients ($r=-0.06$, $P=0.48$). HAART did not increase the risk of CVDs for patients with HF, with comparable D:A:D (R) ($r=0.002$, $P=0.97$) and D:A:D (F) ($r=0.04$, $P=0.62$) scores. HF patients presented with higher risk of T2DM ($r = 0.24$, $P=0.01$), increased total cholesterol (CHO) ($r=0.23$, $P=0.006$), compared to baseline. Moreover, patients with HF presented with significantly higher risk of increased LDL ($r=0.18$, $P=0.04$) and increased uric acid ($r=0.35$, $P=0.004$) in HF patients. In conclusion, HAART was equally effective for HF and non-HF patients, and did not result in more subsequent CVDs or renal toxicities, when compared with patients without HF; however, increased risk of metabolic complications, including T2DM, and increased levels of CHO, LDL, and uric acid, during follow-ups, were present.

Keywords: Heart failure, metabolic syndrome, highly active antiretroviral therapy, human immunodeficiency virus

Abbreviations: Highly active antiretroviral therapy, HAART; human immunodeficiency virus, HIV; Data Collection on Adverse Effects of Anti-HIV Drugs, D:A:D; heart failure, HF; type 2 diabetes mellitus, T2DM.

Funding and Conflicts of Interest

The authors reported no conflict of interests.