

Poster presentation

Metabolic syndrome among patients initiating HAART and outcome in Southern India

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Purpose of the Study

South Indians are known to be genetically predisposed to diabetes mellitus and cardiovascular diseases. There are several reports of emerging insulin resistance and metabolic syndrome among HIV-infected persons from the Western population. This study reports insulin resistance and consequently metabolic syndrome among HIV-infected patients initiating HAART in South India and its outcomes.

Methods

BMI, fasting blood sugar, insulin, lipids (cholesterol, HDL, triglyceride), 2-hr OGTT and blood pressure were evaluated for 78 treatment-naïve HIV-infected patients (35 years, 66% male, BMI: 19.6 kg/m², CD4: 175 cells/mm³) and 22 HIV-negative subjects (34 years, 68% male, BMI: 21.9 kg/m²) as controls at YRG CARE, Chennai, South India. Of the 78 HIV-infected individuals, 38 were initiated with efavirenz-based HAART, the NRTIs being AZT/d4T+3TC and all the above parameters were repeated after 12 months of therapy. Homeostasis Model Assessment (HOMA) was calculated to assess insulin resistance (IR). Modified NCEP ATPIII guidelines were used to define abnormal values.

Summary of Results

At baseline, in the HIV-positive and -negative groups, respectively, 40% and 36% had IR by HOMA (>2.0), 92% and 55% had low HDL (M<40; W<50 mg/dl; p < 0.001),

15% and 23% had high TG (>150 mg/dl), 40% and 36% had high 2-hour OGTT (>120 mg/dl) and 9% and 18% had high waist circumference (M>90; W>85 cm). In both the HIV-positive and -negative groups, fasting blood sugar and blood pressure were within normal limits. In the HIV-positive and -negative groups, nine (11.5%) and six (27.3%) subjects, respectively, were identified as having metabolic syndrome. The 38 who were treated with HAART had mean increases in HDL and TG (p < 0.001), while BP, waist and HOMA were unchanged. The metabolic syndrome identified in five (13%) HIV-infected patients at baseline was decreased to three (7.9%) after 12 months of HAART due to the improvements in HDL.

Conclusion

This study shows a high frequency of metabolic syndrome among HIV-positive patients due to low HDL and high insulin resistance. Efavirenz-based HAART, due to its beneficial effect on HDL, has been protective against metabolic syndrome in the first 12 months in this study but its long-term effects need to be studied. As HAART is available in large-scale government programs, routine monitoring of metabolic parameters is essential to minimize cardiovascular risk.