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RELATIONSHIPS AMONG ADRENAL HORMONES AND SERUM LIPIDS DIFFER IN CAUCASIAN AND AFRICAN-AMERICAN HIV-POSITIVE WOMEN TREATED WITH COMBINATION ANTIRETROVIRAL THERAPY

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BACKGROUND: Combination antiretroviral therapy for HIV infection has been associated with abnormalities of body fat distribution, hyperlipidaemia and glucose tolerance. Adrenal hormones also affect body fat and lipid and glucose metabolism. Cortisol and DHEA have been associated with dyslipidaemia in HIV-positive men on HAART.

OBJECTIVES: To compare the associations among the adrenal hormones, lipids and body fat distribution in Caucasian and African-American HIV-positive women treated with HAART.

DESIGN: Cross-sectional evaluation of 39 women (26 Caucasian, 13 African-American), including anthropometric measures, serum lipids, glucose, insulin and adrenal hormones.

RESULTS: Levels of morning cortisol, DHEA and aldosterone were similar in the two groups of women. None of the adrenal hormones tested correlated with BMI, WHR, glucose or insulin in either group or in the women as a whole. However, there were strong correlations between cortisol and lipid levels with striking differences between ethnic groups. In Caucasian women, morning cortisol levels correlated with total cholesterol ($r=0.52$, $P=0.005$), LDL cholesterol ($r=0.54$, $P=0.005$) and apo B ($r=0.62$, $P=0.005$). In contrast, cortisol correlated with HDL ($r=0.65$, $P=0.017$) and apoA-I

($r=0.74$, $P=0.004$) in African-American women. DHEA correlated with HDL ($r=0.56$, $P=0.046$) in the African-American subjects. Aldosterone correlated with triglycerides ($r=0.42$, $P=0.033$), total cholesterol/HDL cholesterol ($r=0.43$, $P=0.034$) and apoB/apoA-I ($r=0.45$, $P=0.025$) in Caucasian women and with HDL₃ ($r=0.42$, $P=0.008$) in African-American women.

CONCLUSIONS: Adrenal hormones are correlated with serum lipids but not glucose, insulin or anthropometric measures in HIV-positive women treated with HAART. However, the relationships are different in white and black women. Cortisol is related to measures of LDL and aldosterone with triglycerides in white women; and cortisol, DHEA and aldosterone with measures of HDL in black women.

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