



# 8th International Workshop on Adverse Drug Reactions and Lipodystrophy in HIV

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## **METABOLIC SYNDROME, CARDIOVASCULAR DISEASE AND TYPE 2 DIABETES MELLITUS AFTER INITIATION OF ANTIRETROVIRAL THERAPY IN HIV-INFECTED ADULTS**

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Metabolic Syndrome (MS) is a clustering of factors, including central obesity, hypertriglyceridaemia, hyperglycaemia, hypertension and low levels of HDL cholesterol. It identifies adults at risk of cardiovascular disease (CVD) and/or type 2 diabetes mellitus (T2DM) in general populations. Antiretroviral therapy (ART) is associated with many MS abnormalities as well as an increased rate of CVD.

Eight hundred and eighty one HIV-infected adults, who initiated their first ART regimen were evaluated for prevalence and incidence of MS and subsequent diagnosis of CVD and T2DM over 3 years. MS was defined by the International Diabetes Federation (IDF) or the Third Report of the National Cholesterol Education Program (NCEP) Expert Panel on Detection, Evaluation, and Treatment of High Blood Cholesterol in Adults (Adult Treatment Panel III) (ATP-III).

The prevalence of MS at baseline was 11% and 9% (ATP-III and IDF criteria respectively). During follow-up, progression to MS among participants without MS at baseline was 32% (ATP-III) and 22% (IDF). In addition to established risk factors (older age, high body mass index, greater dyslipidaemia, hypertension and increased fasting glucose), receipt of a protease- inhibitor (PI) containing regimen was associated with a greater risk for developing MS (ATP-III) compared to receiving a non-nucleoside reverse transcriptase inhibitor (NNRTI)-based regimen without a PI (adjusted relative risk [RR]=1.53; 95% CI 1.11–2.10). The presence of MS at baseline was associated with an increased risk of T2DM at 3 years (ATP-III: RR=4.37; 95% CI 2.24–8.52;  $P<0.001$ ; IDF: RR=2.89; 95% CI 1.35–6.20;  $P=0.006$ ) and CVD (ATP-III: RR=2.58; 95% CI 0.99–6.7;

$P=0.051$  and IDF:  $RR=2.97$ ; 95% CI 1.14–7.74;  $P=0.026$ ). Incident MS during follow-up (ATP-III and IDF) was also significantly associated with an increased risk of T2DM and non-significantly with an increased risk of CVD-related events. The predictive value of individual MS components for subsequent T2DM and CVD was low. Rapid and frequent progression to MS within 3 years of commencing initial ART regimens is associated with increased risk of CVD and T2DM. MS before ART was a stronger risk factor for development of CVD than incident MS. The presence of MS at ART initiation identifies individuals in whom preventive strategies should be considered.

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