Subclinical atherosclerosis in HIV-infected patients on highly active antiretroviral treatment (HAART)

M.Y. Yuhana1,∗, A. Vijayanathan1, A. Kamarulzaman1, R. Pendek1, N. Ismail2
1 University of Malaya, Kuala Lumpur, Kuala Lumpur, Malaysia
2 University of Technology MARA Sungai Buluh Campus, Sungai Buluh, Selangor, Malaysia

Background: Cardiovascular disease (CVD) has become more prevalent among the HIV-infected patients. Whether or not highly active antiretroviral treatment (HAART) alone directly contributes to subclinical atherosclerosis in HIV-infected patients is controversial. We aim to determine the association between HAART and subclinical atherosclerosis.

Methods: All patients attending the HIV clinic in University of Malaya Medical Centre from July 2011 until January 2012 were included. Patients with symptomatic HIV, established coronary heart disease, hypertension, dyslipidaemia and diabetes mellitus were excluded from the study. Patients were examined for blood pressure and anthropometric measurements. History of tobacco consumption and family history of coronary artery disease were obtained. Biochemical analysis comprises oral glucose tolerance test, full lipid profiles (after a 10-hour fasting), CD4 cell counts and HIV RNA viral load. Analysis of carotid intima-media wall thickness (CIMT) was carried out by a single trained ultrasonographer throughout the study period using the high-resolution B-mode ultrasonography. Subclinical atherosclerosis was defined as the presence of plaque (focal echogenic structure with CIMT > 1.2 mm), or CIMT > 0.8 mm.

Results: 109 HIV-infected patients were enrolled in this study. 93 (85.3%) were on HAART and 16 (14.7%) were HAART-naive. A total of 45 (41.3%) patients had subclinical atherosclerosis and out of that 41 (91%) were on HAART. Subclinical atherosclerosis was significantly associated with age, waist circumference, total cholesterol, duration of HIV infection and duration of exposure to HAART, (p < 0.05). Other significant factors associated with subclinical atherosclerosis were hypertension (OR = 2.4; 95% CI 1.1-5.4), high triglyceride (OR = 2.9; 95% CI 1.3-6.7) and exposure to Zidovudine (OR = 2.5; 95% CI 1.1-6.0). However, there were no significant association between family history of CVD, smoking and diabetes to subclinical atherosclerosis.

Conclusion: Both duration of HIV-infection and exposure to HAART were associated with subclinical atherosclerosis in HIV-infected patients. When individual HAART were analyzed, Zidovudine has significant association to subclinical atherosclerosis.

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The prevalence and characteristics of metabolic syndrome in urban Malaysian HIV-infected patients

M.Y. Yuhana1,∗, A. Kamarulzaman1, R. Pendek1, N. Ismail2
1 University of Malaya, Kuala Lumpur, Kuala Lumpur, Malaysia
2 University of Technology MARA Sungai Buluh Campus, Sungai Buluh, Selangor, Malaysia

Background: Cardiovascular disease (CVD) and metabolic syndrome (MS) have become more prevalent among the HIV-infected patients. The purpose of this study is to describe the prevalence and characteristics of MS among the HIV-infected patients.

Methods: All patients attending the HIV clinic in University of Malaya Medical Centre from July 2011 until January 2012 were included. Patients with symptomatic HIV, established coronary heart disease, hypertension, dyslipidaemia and diabetes mellitus were excluded from the study. Patients were examined for blood pressure and anthropometric measurements. History of tobacco consumption, family history of CVD and history of exposure to highly active antiretroviral treatment (HAART) were also obtained. Biochemical analysis comprises oral glucose tolerance test, full lipid profiles (after a 10-hour fasting), CD4 cell counts and HIV RNA viral load. MS was confirmed using the Harmonized criteria (2009).

Results: 126 patients were enrolled in this study. 109 (86.5%) were on HAART and 17 (13.5%) were HAART-naive. Prevalence of MS observed among the HIV-infected patients was 32.5%. The prevalence increased from 19.4% among the HIV-infected patients under age 40 years to 43.8% for those aged more than 40 (p = 0.02). HIV-infected patients with MS were more likely to be male (OR = 3.1; 95% CI:1.2-8.2) and have higher mean body mass index (BMI) (26.3 + 5.0 kg/m2; p < 0.05). Higher prevalence of MS observed in patients on HAART than HAART-naive, 33% and 29% respectively. Patients on HAART with MS were noted to have higher mean age (42.5 ± 8.5, p < 0.05) and lower BMI (mean = 23.3 ± 3.1 kg/m2; p < 0.05) compared to HAART-naive with MS. Total cholesterol and HDL-c were (5.3 ± 1.0 mmol/L) and (1.3 ± 0.3 mmol/L) respectively (p < 0.05). Duration of HAART was not a significant factor for MS. When individual HAART was analyzed Ritonavir contributes to MS (OR = 3.2; p = 0.045).

Conclusion: There is high prevalence of MS among HIV-infected patients in Malaysia. Exposure to Ritonavir may increase the risk of developing MS. These study findings highlight the importance of implementing targeted measures in preventing CVD among HIV-infected patients.

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