MICROCIRCULATORY DYSFUNCTION IN HIV INFECTED PATIENTS

ACC Poster Contributions
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Background: A high risk of atherosclerosis and cardiovascular disease has been described in HIV positive individuals receiving highly active antiretroviral therapy (HAART). Reactive hyperemia is an endothelial dependant vascular reaction to ischemia in order to prevent tissue damage. We investigated whether HIV (+) individuals receiving HAART and HIV (+) patients who where naïve to medication had differences in their vascular function.

Methods: We compared measurements of forearm reactive hyperemia using venous occlusion strain gauge plethysmography (Hokanson A16 Arterial Inflow System) in HIV individuals receiving HAART with patients naïve to treatment with similar risk factors. Mean carotid intima media thickness (IMT) of the right, left common carotids and carotid bulbs was measured in all subjects using B-mode ultrasonography.

Results: Forty four (N=44) HIV patients receiving HAART were compared to twenty six (N=26) naïve to therapy HIV patients with similar clinical characteristics. Patients exposed to treatment had worse reactive hyperemia results since they had lower % change in the blood flow between the maximum hyperemic blood flow and the baseline blood flow at rest (690±256 vs. 903±320 %, p<0.01). The maximum hyperemic flow in HAART receiving patients was lower comparing to HAART naïve patients (37.7 ±11.1 vs. 31.9±11.0 /100ml/min, p<0.05). The baseline flow was similar between the two groups. In multivariate analysis the % change in the forearm blood flow during maximum hyperemia was independently correlated with treatment with HAART (p<0.01), total cholesterol (p<0.05) triglycerides (p<0.05) and carotid IMT (p<0.05), a marker of subclinical atherosclerosis.

Conclusions: Patients with HIV infection receiving HAART present functional abnormalities of arterial microcirculation as assessed by the reactive hyperemia parameters in comparison with naïve to therapy patients. This vascular dysfunction is determined by HAART treatment and metabolic parameters of the patients and is related with the carotid atherosclerosis increasing the risk of cardiovascular events in these subjects.