ABSTRACT

Background: Coronary artery calcium (CAC) scoring significantly improves cardiovascular risk stratification; however, CAC is a late finding of atherosclerotic vascular disease. Increased stiffness (i.e., decreased distensibility) may be an early marker of vascular disease in HIV-infected patients on antiretroviral therapy (ART) prior to the development of vascular calcification. The relationship of chronic systemic immune dysregulation to these early vascular changes in HIV is poorly understood.

Methodology: High-resolution carotid ultrasound was used to examine common carotid artery intima-media thickness (CCA-IMT) and distensibility among 147 HIV-infected patients on ART. CAC scoring was performed with computed tomography. Spearman correlations were used to examine the relationships between carotid distensibility and biomarkers of inflammation and immune activation among those with and without detectable CAC.

RESULTS

Table 1 (left): Baseline characteristics of study participants by CAC score described as median [IQR]. * p<0.05, ** p<0.01. Table 2 (below): Carotid distensibility was negatively correlated with C4D+ T-cell activation, patrolling monocytes, IL-6, and endothelial dysfunction among participants without any evidence of coronary calcification. * p<0.05.

CONCLUSION. Carotid distensibility, a marker of vascular stiffness, correlates with inflammation and immune activation in HIV-infected patients without detectable CAC. Further, C4D+ activation and monocyte activity may play important roles in early vascular disease prior to the development of calcific atherosclerosis.

ACKNOWLEDGEMENTS

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