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PROSPECTIVE RANDOMIZED CLINICAL TRIAL OF THE EFFECTS OF THREE MODERN ANTIRETROVIRAL THERAPIES ON CAROTID INTIMA-MEDIA THICKNESS IN HIV-INFECTED INDIVIDUALS (AIDS CLINICAL TRIALS GROUP STUDY A5260S)

Poster Contributions
Hall C
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Background: HIV infection increases the risk of cardiovascular disease (CVD); however the role of antiretroviral therapy (ART) is poorly defined. We compared the effects of 3 contemporary ART regimens on atherosclerosis progression.

Methods: ART-naïve HIV-infected individuals (n=328) without known CVD or diabetes mellitus from 26 institutions were randomly assigned to tenofovir/emtricitabine plus atazanavir/ritonavir (ATV/r, a pharmacologically boosted protease inhibitor [PI/r]), darunavir/ritonavir (DRV/r, a PI/r), or raltegravir (RAL, an integrase inhibitor). Right common carotid intima-media thickness (CIMT) was evaluated by B-mode ultrasonography before ART, then after 48, 96, and 144 weeks. Comparisons of the yearly rates of change in CIMT used mixed effects linear regression.

Results: HIV-1 RNA suppression rates were high in all arms (>85% at 144 weeks). Modest increases in triglycerides and non-HDL cholesterol were observed in the PI/r arms compared to decreases with RAL (Figure). In contrast, CIMT progressed more slowly on ATV/r (8.2 95% CI [5.6, 10.8] μm/yr) than DRV/r (12.9 [10.3, 15.5] μm/yr, p=0.013); changes with RAL were intermediate (10.7 [9.2,12.2] μm/yr (P=0.15 vs. ATV/r; P=0.31 vs. DRV/r) (Figure).

Conclusions: Treatment-naïve HIV-infected individuals randomized to an initial ART regimen including ATV/r experienced slower progression of CIMT than those assigned DRV/r or RAL, despite better lipids on RAL and similar virologic effects.