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### HIV neuropathy: an in vivo confocal microscopic study.

Almodovar JL, Schifitto G, McDermott MP, Ferguson M, Herrmann DN., *J Neurovirol.* 2012 Dec;18(6):503-10. doi: 10.1007/s13365-012-0130-1.

#### ABSTRACT

Several approaches exist for quantitative assessment of human immunodeficiency virus (HIV)-associated distal sensory polyneuropathy (DSP). While useful, each has some limitations. This study evaluated non-invasive, in vivo reflectance confocal microscopy (RCM) of Meissner corpuscles (MCs) as a measure of HIV-DSP. Forty-eight adults (29 HIV-infected, 19 controls) underwent RCM of MC density (MCs/mm<sup>2</sup>) at the arch, fingertip, and thenar eminence (TE); ankle skin biopsy to measure epidermal nerve fiber density (ENFD); electrophysiologic studies; and tactile, vibration, and thermal threshold testing. HIV+ subjects were clinically categorized as having DSP signs or no signs. MC densities were lower in HIV+ subjects with DSP signs than in controls (arch,  $p=0.0003$ ; fingertip,  $p<0.0001$ ; TE,  $p=0.0002$ ). Tactile thresholds in the TE and foot were worse in HIV-DSP than in controls, but in this mild DSP cohort, sural amplitudes, ENFD, and vibration and thermal thresholds did not differ significantly from controls. Fingertip MC densities and tactile thresholds at the foot were also lower in HIV+ subjects without DSP signs than in controls. Other sensory measures were not significantly different in HIV+ subjects without DSP signs than in controls. MC density correlated inversely with tactile thresholds at each imaging location. The results suggest that RCM of MC density complements existing sensory DSP measures and discriminates mild HIV-DSP from controls at a stage when sural amplitudes do not. Further studies are required to determine whether RCM of MC density can establish quantitative changes in DSP, in response to treatment or disease progression.