026 MITOCHONDRIAL MUTATIONS IN HIV-ASSOCIATED SENSORY NEUROPATHY

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Introduction HIV-associated sensory neuropathy (HIV-SN) is one of the most common complications of HIV infection. Although its exact pathogenesis is unknown, studies so far implicate a combination of indirect neurotoxicity of HIV envelope protein gp120 and direct toxicity of antiretroviral drugs through mitochondrial DNA (mtDNA) damage. We describe the first minimally invasive method to assess mtDNA mutation burden in HIV patients.

Methods Sixty-seven patients were enrolled in three arms (n=23, 22, 22) consisting of: i) stavudine (d4T)+lamivudine (3TC) (for 24 weeks) followed by zidovudine (AZT) ii) continuous AZT+3TC or iii) continuous tenofovir (TDF)+emtricitabine (FTC) and underwent neuropathy assessment and skin biopsy sampling at baseline, 24 and 72 weeks. Following mtDNA extraction, a nested polymerase chain reaction (PCR) technique was used to determine total mitochondrial deletion mutation burden.

Results Most subjects experienced symptoms of a mild, sensory-predominant painful peripheral neuropathy. Total mitochondrial deletion mutation burden correlates significantly with reduced intraepidermal nerve fibre (IENF) density (p=0.003).

Discussion We describe the first evaluation of mtDNA deletion burden in HIV-infected patients using a minimally invasive technique. Our data demonstrates a correlation between IENF density and mitochondrial mutation burden in patients with HIV SN assessed via skin biopsy sampling.