Neuropathic Pain Profiling in Retroviral Infection (NIPPR)
Preliminary results of an observational study of people with HTLV-1 infection

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Background
Between 5 and 10 million people worldwide are carriers of HTLV-1. The estimated United Kingdom incidence of 30,000, consists mainly of those from an Afro-Caribbean and West African descent. The significant burden of pain in HTLV-1 is associated with reduced quality of life, psychological symptoms and decreased functional capacity. Pain appears to be a both nociceptive and neuropathic, also affecting asymptomatic carriers(ACs). Currently little is known about the pain generation mechanisms in HTLV-1. This study aimed to characterise pain in HTLV-1 infection, focusing on neuropathic symptoms and identifying any difference in intra-epidermal nerve fibre density (IENFD) between those with and without neuropathic pain.

Methods
This is a cross-sectional observational cohort study, reporting preliminary results for 24/40 participants. Ethical approval(REC254927) and informed consent was obtained. All participants underwent a comprehensive assessment measuring: distal leg IEFND and validated pain questionnaires. Douleur Neuropathique 4 Interview Score (DN4i) >=3 was used to define neuropathic pain. Between group comparisons performed using the Kruskall Wallis test.

Results
Twenty four participants (6♂;18♀; HAM n=11; AC n=13) were recruited. Median age of 59 years(IQR52.7-64); median duration of infection in people with HTLV-Associated-Myelopathy(pwHAM) =9.5 years(IQR 6.5-14.3) and ACs=10 years(IQR 7-15). HTLV pro-viral load for ACs =6.5%(IQR 1.9-12) vs pwHAM=8.2%(IQR2.9-14.4).Six participants (pwHAM: n=4; AC=2) were defined as having neuropathic pain in their feet. IENFD was significantly lower in pwHAM 3.1(1.85-5.93) vs AC 6.1(4.0-9.8);$p<0.01$) including vs normative values(8.7(8.7-9.8);$p<0.0001$).There was no significant difference in IENFD between those with and without neuropathic pain.

Conclusion
Neuropathic pain appears to be a feature in pwHAM and ACs. IEFND for pwHAM appeared to be lower than ACs and normative data. Reduced IENFD was not associated with the presence or absence of neuropathic pain. Studies investigating small nerve fibre function and structure, could provide further information about pain generating mechanisms in HTLV-1 infection.

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