Hepatitis C Seropositivity is Not a Risk Factor for Sensory Neuropathy in Patients with HIV Infection.

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Background

Sensory neuropathy (SN) remains one of the commonest neurological problems seen in HIV patients.[1-5] Co-infection with Hepatitis C (HCV) is often cited as a risk factor for SN in HIV, based largely on the association between HCV mono-infection and peripheral neuropathies.[6]

Epidemiologic data to support an association between HCV co-infection and SN in HIV patients are lacking.

Aim

To determine whether HCV co-infection associates with increased SN risk among ambulatory HIV patients.

Methods

Patients were assessed for SN in HIV clinics in Melbourne, Jakarta, Kuala Lumpur and Baltimore 2002 – 6.[2, 3]

SN was defined by the presence of both supportive symptoms and signs. Antiretroviral (ART) history and medical data including HCV antibody status were collected on all patients. Only stavudine-exposed patients were studied in Jakarta.

Statistical analyses were performed in Stata 9.2 (StataCorp, USA).

Results

A total of 503 patients were assessed at the four sites.
The overall SN rate was 39% and HCV seroprevalence 31%, however this varied widely by site (Table 1).

	Melbourne	Jakarta	Kuala Lumpur	Baltimore
Number	206	98	97	104
SN rate	39%	34%	19%	62%
HCV rate	16%	51%	10%	61%
Stavudine ever	67%	100%	47%	66%
Age	44 (19-75)	30 (17-56)	43 (23-75)	NA
Nadir CD4	179 (0-176)	91 (1-633)	87 (0-530)	NA
Ethnicity	83% Caucasian	66% Malay 30% Chinese	70% Chinese 15% Malay 10% Indian	88% African American

Table 1: Description of cohorts involved in this work. Continuous variables are shown as mean (range). NA = data not available.

HCV serostatus was not associated with SN among patients at any site except Melbourne. In Melbourne the presence of HCV antibodies was associated with a *reduced* risk of SN (Table 2).

	SN patients	SN free	p (Chi^2)
Melbourne	6%	21%	0.003
Jakarta	58%	48%	0.4
Kuala Lumpur	6%	11%	0.5
Baltimore	56%	68%	0.3
Overall	31%	30%	0.8

Table 2: HCV serostatus in patients with and without SN at each site. Note that HCV seropositivity appears protective against SN in Melbourne patients.

To exclude a possible confounding effect from exposure to stavudine (a known neurotoxin), logistic regression modelling was undertaken to examine the association between HCV co-infection and SN status after correcting for whether or not the patient had ever been exposed to stavudine (Table 3).

	Odds ratio	95% CI	p value
Melbourne	0.2	0.09 – 0.7	0.007
Jakarta	1.5	0.6 – 3.5	0.4
Kuala Lumpur	0.5	0.06 – 3.4	0.5
Baltimore	0.5	0.2 – 1.1	0.09
Overall	0.9	0.6 – 1.4	0.7

Table 3: Results of logistic regression modelling examining HCV co-infection as a possible neuropathy risk factor after correcting for whether each patient had used stavudine.

Discussion

We found no association between HCV co-infection and SN risk in any cohort of HIV patients studied. These data represent more than 500 patients of African American, Asian and Caucasian descent and the cohorts studied demonstrate varying HCV infection rates and antiretroviral treatment exposures.

The apparent "protective" effect of HCV co-infection against SN in Melbourne and Baltimore raises the question of whether co-infected patients (often intravenous drug users) may have lower rates of exposure to potentially neurotoxic antiretroviral agents. However, on multivariate analyses this finding could *not* be explained by differential uptake of stavudine-based therapy by co-infected patients.

The limitations of this work include the fact we were unable to examine HCV RNA levels or evidence of liver damage in this study due to inclusion of cohorts from sites where these are not routinely monitored. We cannot exclude a possible association between increased SN risk in HIV patients and high levels of HCV viremia or HCV-associated chronic liver disease. In addition, we have not addressed all possible confounding factors here. A much more extensive examination of risk factors for SN in HIV (including detailed demographics, treatment exposures, clinical factors and host genetics) would be required to exclude a minor contribution from HCV status to the individual patient's risk of SN.

Conclusions

These data suggest that HCV co-infection is not a major contributing factor to the continued high rates of SN observed among patients with HIV globally.

References

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