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Poster presentation

Transient elastography (Fibroscan) in HIV-1 vertically infected children. A cross-sectional study

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Progressive liver toxicity is a concern in HIV-infected patients. Although liver biopsy remains the gold standard for liver assessment, its invasiveness, sampling errors, variability in interpretation and expense do not make it an ideal routine follow-up exam. During the last decade, new non-invasive tools have been developed for the assessment of hepatic fibrosis in HCV and HIV/HCV co-infected patients.

The aim of this cross-sectional study was to evaluate the feasibility of transient elastography (TE) measuring liver stiffness in chronically HIV-infected children. Inclusion criteria were: materno-foetal transmission, age 8 to 18 years old, informed parental consent and patient assent. Twenty-one HIV-1 chronically infected children were included. There were 11 girls and 10 boys, with a median age of 13.2 years (8.3–17.3). Five were HIV stage N, 3 were stage A, 6 were stage B and 6 suffered from AIDS definition illness (stage C). For one orphan child HIV CDC status could not be determined. Mean weight was 46.7 kg (18.4–83.5), mean height was 151.2 cm (116–175). Mean CD4 T-cell count at inclusion was 669 cells/mm3 (256–1,252) or 29.9% (9.4–45%), mean viral load was 3.88 log10 copies/mm3 (1.60–4.83). Eight children had undetectable viral load (<40 copies/mm^3). At the time of enrolment, 10 patients received conventional HAART with two NRTIs (nucleoside reverse transcriptase inhibitor) and 1 PI (protease inhibitor), 4 received 2 NRTIs + 1 NNRTI (non-nucleoside reverse transcriptase inhibitor), 2 patients were on dual NRTI association, 1 was on triple NRTI combination and 1 were receiving 1 drug of each class (NRTI+NNRTI+PI). Three children were on planned treatment interruption.

All patients underwent a Fibroscan exam. The two youngest children failed in having a TE measure because of technical difficulties due to their small corpulence. The average measurement success rate was 96.7%. HIV-infected patients had significantly higher TE results than matched healthy control children (5.92 +/- 1.60 versus 4.34 +/- 1.10 kPa) ($p < 0.02$). Furthermore, loss of elasticity assessed by TE measures tended to increase with age in a linear manner (adjusted R2: 0.208, $p < 0.03$). This correlation was found only in the HIV-infected group. We therefore hypothesized that HIV infection and/or continuous exposure to antiretroviral treatment were responsible for this relation.

Our results showed that 1 – evaluation of liver stiffness is feasible in most HIV-1 chronically infected children. 2 – Patients had significantly higher TE results than matched healthy control children 3 – the loss of elasticity tended to increase with age in a linear manner. Liver injury should be monitored on a regular basis. The place of TE in the management of these children must be further defined.