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Frequency of hepatic steatosis in HIV and hepatitis C co-infected patients treated by antiretroviral therapy during 1995 to 2008

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Purpose of the study

To evaluate prevalence and severity of hepatic steatosis and to assess risk factors influencing liver steatosis in HIV/HCV patients taking antiretroviral therapy (ART).

Methods

Retrospective study conducted on HIV/HCV patients treated by ART in one clinical centre, who underwent liver biopsies between 1995 and 2008. Hepatic steatosis was graded according to the percentage of hepatocytes affected: 0, none; 1, involving <33%; 2, 33–66%; and 3, >66%. Demographics and laboratory parameters were recorded at time of liver biopsy. Cumulative exposure to ART was reported from the initiation of ART to liver biopsy date. Statistical analysis was perfomed using SPSS version 13.0.

Results

184 HIV/HCV co-infected patients were included. Median age was 41 years (IQR, 36–45), 84% were male, 89% were Caucasian, 61% had a past history of IV drug abuse. HCV genotype was G1 (n = 98, 55%), G2 (10, 6%), G3 (47, 26%), and G4 (24, 13%). Median HCV-RNA was 3.18 log KUI/ml (2.76–3.6). At the time of biopsy, median duration of HIV infection was 11 years (7–14), HIV viral load was not detected (<200 copies/ml) in 67% of patients and the median HIV viral load was 3.93 log copies/ml (3.15–4.82) in patients remaining, CD4 cell count was 321/mm3 (227–461). All patients have been exposed to NRTI, and the median cumulative exposure was 56 months; 126, and 79, patients have received IP, and NNRTI, respectively (median cumulative exposure of 23, and 16 months). Steatosis was observed in 102 patients (55%): 76 (41%) with steatosis grade 1; 10 (5%) grade 2; and 16 (9%) grade 3. By multivariate logistic regression, HCV genotype 3 (OR, 2.6; 95%CI, 1.1–5.9), RNA HCV (OR, 2.2 per 1 log higher; 1.2–3.9), and hepatic fibrosis staging F2-F4 (2.7; 1.4–5.5) were associated with an increased risk of steatosis. After adjustment on period, no association was detected between steatosis and exposure to antiretroviral drug classes or exposure to each drug taking separately, or duration of exposure.

Conclusion

In our population of HIV/HCV co-infected patients receiving ART, half of them presented liver steatosis. Steatosis was associated with genotype 3, RNA HCV, and hepatic fibrosis. No association was observed between steatosis and antiretroviral therapy, as well as HIV markers (i.e. CD4 and HIV-RNA).