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Absence of liver steatosis in HIV-infected patients receiving tenofovir-containing regimen

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Purpose of the study

Liver steatosis is a common and important histological finding in hepatitis C, and is associated with an increased progression of the disease. In HIV co-infected patients, steatosis was independently associated with d-drugs, such as stavudine, especially in non-3 HCV genotypes. We investigate the safety of tenofovir disoproxil fumarate (TDF) in determining hepatic steatosis in HIV/HCV co-infected patients.

Methods

All consecutive HCV-infected patients who had undergone a liver biopsy have been included in this study. Primary outcomes were the presence or absence of steatosis, or the presence of fibrosis.

Summary of results

370 HCV-infected patients underwent liver biopsy; 182 co-infected with HIV. Steatosis (>5% in liver biopsy) was diagnosed in 33.0% of HCV mono-infected and in 47.3% in HIV co-infected patients (OR 1.82; p = 0.005). Fifty HIV patients (27.5%) were naïve to antiretroviral therapy. Eighty-nine patients received stavudine for a median of 38 months (IQR 17.5–58), while 36 patients received tenofovir for a median of 23 months (IQR 8.8–32). Factors associated with steatosis were: genotype 3 (OR 3,14; p < 0.001), presence of fibrosis (OR 1.91; p = 0.039), duration of HCV infection (OR 1.10; p = 0.001) and use of d4T in HIV patients (OR 3.00; p = 0.021). Considering only patients with genotype 3, duration of HCV infection (OR 1.19; p = 0.001) and HCV RNA levels (OR. 1.04; p = 0.039) were the only determinants of steatosis. In HCV genotype other than 3 the risk of steatosis was related to fibrosis (OR 3.95; p = 0.002), use of d4T (OR 4.98; p = 0.014) and older age (OR 1.09; p = 0.014). In all cases use of TDF was not associated with steatosis.

Conclusion

As previously described, the risk of steatosis is mainly associated to HCV genotype 3 in patients infected by HCV. HIV co-infected patients with genotype other than 3 are at risk of developing steatosis with stavudine but not with tenofovir.