Association of Fibroblast Growth Factor 23 and Serum Ferritin with Liver Fibrosis diagnosed by Transient Elastography in HIV/HCV Co−Infected Patients

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HIV/HCV co−infection is characterized by a faster progression of liver fibrosis towards cirrhosis. Identification of biomarkers associated with liver fibrosis is pivotal for prognosis and management. We studied correlation of iron and inflammatory serum biomarkers (hepcidin, iron, ferritin, transferrin saturation, fibroblast growth factor 23 (FGF23), interleukin-6 and tumor necrosis factor-α) with significant liver fibrosis diagnosed by transient elastography (TE). We selected these biomarkers because the iron and inflammatory status are known to affect liver damage. We included HIV/HCV co−infected patients who were HCV RNA positive, on antiretrovirals and had HIV viral load <50 cp/mL. Pairwise correlation and linear regression were used to explore association with liver fibrosis. 45 consecutive patients (mean age 47 years, 78% male) were included. Median TE measurement was 7 kPa (interquartile range 5.2−14). 48% of the patients had significant liver fibrosis. Liver fibrosis was significantly correlated with ferritin (r=0.51, p=0.001), transferrin saturation (r=0.36, p=0.003), FGF23 (r=0.36, p=0.02) and interleukin−6 (r=0.42, p=0.007). The results of multivariate analysis and relative regression coefficients are shown in the Table. After adjustments, ferritin and FGF23 were independently associated with liver fibrosis.
Conclusions: In HIV/HCV co−infected patients, serum ferritin and FGF23 are positive independent predictors of liver fibrosis. These data are consistent with recent findings identifying serum ferritin as independent predictor of advanced fibrosis and mortality in chronic liver diseases of other etiologies. They also suggest that serum FGF23 has a potential as biomarker for liver fibrosis in HIV/HCV co−infected patients. Larger scale studies are required to validate our data.

Table

	Adjusted regression coefficient	95% Confidence Interval	p
Serum ferritin	0.04	0.02-0.06	<0.001
FGF23	0.011	0.002-0.021	0.02
Hepcidin	-0.25	-0.53-0.0034	0.08
Inteleukin 6	0.34	-0.124-0.810	0.14