Retrovirology

Poster presentation

Liver disease progression in HIV/HCV co-infected patients: a role for metalloproteinases and their specific inhibitors

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Background of Study

HIV infection accelerates the rate of HCV progression to fibrosis which represents the main factor affecting the prognosis of hepatitis C as well the best indicator of disease status. There is increasing evidence that liver fibrosis is a dynamic pathology c process in which the altered balance between matrix metalloproteiases (MMPs) and their specific inhibitors (TIMPs) may play a major role.

Objective of the Study

To investigate the possible involvement of MMP-9 and TIMP-1 in the HCV liver disease progression in patients co-infected with HIV, we assessed the levels of circulating enzyme and inhibitor in a series of HIV-infected individuals with and without chronic hepatitis C.

Design

Study participants included a total of 76 HIV-infected patients, of whom 49 without HCV infection (median CD4 = 241/mmc;VL = 5 log) and 27 co-infected with HCV (median CD4 = 130/mmc; VL = 5.3 log). All but one of HIV/HCV co-infected patients had evidence of chronic hepatitis C. 11 healthy donors were used as controls. Concentrations (ng/ml) of human TIMP-1 and MMP-9 were detected in plasma samples using the Biotrak ELISA assay (Amersham). Data are expressed as median.

Results

All HIV-infected patients had plasma TIMP-1 levels significantly higher than healthy controls (1740 vs. 755), whereas MMP-9 levels were lower (23 vs. 1157) ($p < 0.001$). The levels of TIMP-1 were significantly higher in patients with CD4 > 300/mmc than those with CD4 < 300/mmc ($p < 0.05$). No statistically significant differences in the levels of MMP-9 and in the TIMP-1/MMP-9 ratio were found between HCV co-infected and not co-infected HIV+ patients ($p < 0.05$).

Conclusion

Our results suggest that the altered balance between MMP-9 and TIMP-1 during HIV infection may play an important role in exacerbating fibrosis progression in patients co-infected with HCV.