MATRIX METALLOPROTEINASES (MMP-2 AND MMP-9), AND TUMOR NECROSIS FACTOR- ALPHA (TNF-α) IN HEPATITIS C VIRUS INDUCED LIVER FIBROSIS

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SUMMARY AND CONCLUSION

Hepatitis C virus (HCV) is an important cause of acute and chronic hepatitis, linked to the development of fibrosis, cirrhosis and hepatocellular carcinoma.

Liver fibrosis is a reaction to chronic liver injury and it is characterized by an excessive accumulation of extracellular matrix proteins including collagen. It is a common process during the majority of chronic liver diseases.

Matrix metalloproteinases (MMPs) represent the main group of regulating proteases that regulate remodeling of extracellular matrix (ECM). Such remodeling is crucial for many physiological (cell migration, proliferation, growth, and development) and pathological (remodeling of heart muscles, carcinogenesis, metastasis, etc.) events.

Aim of the current study was to evaluate the role of MMP-2, MMP-9 and TNF-α in the pathogenesis of chronic liver diseases (CLD) caused by hepatitis C virus (HCV). Also, this study aimed at using them as possible non- invasive serum markers for liver fibrosis.

The present study was conducted on 15 patients with chronic (HCV) and detectable HCV RNA group, 10 patients with established chronic HCV liver cirrhosis and reference group of 15 normal subjects matched in age and sex as a control group. MMP-2, MMP-9 and TNF-α levels were estimated using commercially available ELISA kits.

Our results revealed that the MMP2, MMP9 and TNF-α levels showed a significant elevation in patients with liver fibrosis (F1–F4) compared to control group (P, 0.001).

Results, also, showed that, there was no significant correlation between the METAVIR score and MMP2, MMP9 and TNF-α (P values: 0.166, 0.157 and 0.760 respectively) in chronic HCV (F1–F3) and established liver cirrhosis patients (F4).

In conclusion, MMP2, MMP9 and TNF-α showed high reproducibility to differentiate patients with liver fibrosis (F1–F4) from control group. On the contrary, MMP2, MMP9 and TNF-α were not able to differentiate chronic HCV infected patients (F1–F3) from patients with established liver cirrhosis (F4). Thus our results suggested that MMP2, MMP9 and TNF-α could be potential candidate noninvasive surrogate markers of liver fibrosis.