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Liver stiffness predicts relapse after Direct acting antiviral therapy against chronic Hepatitis C Virus infection

Background & study aim: Assessment of fibrosis in chronic hepatitis has always been considered of utmost relevance for patient care in clinical hepatology. Over the last years, multiple non-invasive methods were used for diagnosis of hepaic fibrosis, including transient Elastography in addition to clinical and biochemical parameters or combinations of both methods. Serum markers and elastography are considered useful techniques for diagnosing severe liver fibrosis and cirrhosis and for excluding significant fibrosis in hepatitis C virus infected patients. Also, liver stiffness may help to foretell treatment response to antiviral therapy. We aimed to evaluate changes of Transient elastography values as well as serum fibronectin and AST to platelet ratio index in patients (APRI) treated with sofosbuvir- based treatment regimen.

Methods: This is a follow-up study including 100 chronic HCV Egyptian patients treated with Sofosbuvir-based treatment regimen. Transient elastography values were recorded as well as serum fibronectin and APRI were calculated at baseline and SVR12.

Results: There was a significant improvement of platelets counts, ALT and AST levels, which in turn cause significant improvement in APRI scores at SVR12. Liver stiffness measurements were significantly lower at SVR12 (15.40±8.96 vs 8.82±4.74 kPa, P =0.000). There was significant decline in serum fibronectin from baseline to SVR 12 (524.14±237.61 vs 287.48±137.67, P=0.000).

Key words: Hepatitis C Virus, Liver stiffness, Transient Elastography and Fibronectin.

Conclusion: Non-pegylated interferon (IFN) or pegylated IFN (PEG-IFN) in combination with ribavirin (RBV) were the main drugs used for the management of HCV infection (22, 23). In 2011, the use of the first-generation direct acting antivirals (DAAs) boceprevir and telaprevir with PEG-IFN and RBV increased the overall SVR rates to 68%-75% for naive patients and to 59%-88% for treatment-experienced patients, even if these regimens were used only for the treatment of genotype 1 HCV infection (24, 25). Despite the positive effect of HCV infection eradication on patients' prognosis, few data about liver cirrhosis/fibrosis regression are accessible. Liver fibrosis regression as a consequence of viral eradication is supported by the reduction of inflammatory mediators that leads to apoptosis of myofibroblasts, and occurs by the inactivation of stellate cells. The downregulation of inflammation, as well as hepatocyte regeneration, microvascular remodeling and degradation of extracellular matrix lead to the generation of new hepatic tissue (26). Our study showed improvement of liver stiffness measurements 12 weeks after end of treatment as well as significant improvement in AST, ALT and platelets count with subsequent improvement of APRI score which signifies notable improvement of hepatic necroinflammation and fibrosis following antiviral treatment. This study showed significant improvement in serum fibronectin levels after antiviral treatment with statistically significant difference in SVR12 patients.We also found that each of ALT, AST and baseline liver status (cirrhotic or noncirrhotic) can predict relapse in HCV treated patients. As compared to pre-treatment values, SVR12 LS scores are significantly reduced which reflects improved liver fibrosis parameters with available DAAs. Also, high LS measurements before treatment can be a predictor of relapse and so LS can be used to guide treatment duration by prolonging duration of treatment but more trials are needed.

Biography

Ali Abdelrahman Sayed completed the Bachelor of medicine from the Sohag Faculty of Medicine 1998, Sohag. Then he completed his post-graduation in Gastroenterology from Sohag Faculty of Medicine 2000, Sohag. He is currently serving as the faculty of Medicine and Tropic Infectious Diseases in South Valley University, Luxor, Qena, Egypt. He has attended various international conferences as speakers and conducted workshops as well.

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