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World Gastroenterology 2018: Liver stiffness predicts relapse after direct acting antiviral therapy against chronic hepatitis C virus infection- Ali Abdelrahman Sayed- South Valley University

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Hepatitis C Virus (HCV), and its long-term resultant consequences, is a major endemic medical health problem in Egypt. Having taken a representative sample of the country, from both urban and rural areas, an Egyptian demographic health survey conducted in 2008 concluded that 14.7% With incidence rates between 2 and 6 per 1000 every year, this leads to an estimated 170,000 new cases every year to add to the 11.5 million patients suffering from the disease Guidelines for the therapy of Chronic Hepatitis C (CHC) recommend evaluating liver fibrosis which helps in selecting treatment options and the perfect choice of treatment timing suggesting that evaluation of fibrosis after antiviral therapy could be of clinical importance for the management of these patients. In the last years, Transient Elastography (TE) and Magnetic Resonance (MR) Elastography have also been used as non-invasive tools for the diagnosis of hepatic fibrosis. Additionally, transient elastomer represents a non-invasive tool to identify patients with persistent clinically significant portal hypertension after achieving SVR. However, the median levels of LS differ considerably between clinical trials and studies aimed at evaluating the efficacy and safety of therapy against HCV infection in patients with cirrhosis. In addition, response according to the level of LS have scarcely been analysed in cirrhotic subjects receiving DAA-based combinations.

Patients and Methods: This is a follow-up study including 100 Chronic Hepatitis C (CHC) patients attending the outpatient clinics of the Tropical Medicine and Gastroenterology and the Internal Medicine Departments-Qena University Hospital age 18-75 years, HCV RNA positivity, any BMI (weight in kilograms/squared height in meters), treatment-naïve patients only were included in this study. Exclusion criteria included HBV co-infection, HIV, decompensated liver cirrhosis, inadequately controlled diabetes mellitus (HbA 1 c >9%), hepatocellular carcinoma or extra-hepatic malignancy. Diagnosis of liver cirrhosis was on clinical basis involving laboratory tests and ultrasonography findings of liver cirrhosis and/or liver stiffness measurement ≥ 12.5kPa. All patients underwent Transient Elastography (TE) within two weeks before treatment initiation as well as serum fibronectin measurement and APRI was calculated. All study patients were treated with Sofosbuvir-based treatment regimens according to the approved treatment recommendation of EASL. Patients were assessed for HCV RNA at week zero (baseline), end of treatment and 12-weeks after end of treatment (SVR12). Undetectable HCV RNA by quantitative polymerase chain reaction assay (Cobas Amplicor, HCV Roche, Branchburg, NJ, USA, V2.0, detection limit 15IU/mL) 12-weeks after end of treatment was defined as SVR12, which is the main indicator of successful treatment.

Background & study aim: Assessment of fibrosis in chronic hepatitis has always been considered of utmost relevance for patient care in clinical hepatology. 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: The demographic criteria of the studied patients showed a mean age of 45± 12 years with male predominance (69%). 80% of the studied patients were non-cirrhotic. Regarding Liver Stiffness (LS) measurement, 17% had non-significant fibrosis. The mean value of liver stiffness measurement was 15.40±8.96kPa while the mean value of fibronectin level was 524.14±237.61 and the mean value of APRI was 0.91 ±0.62. At end of treatment, all patients were responders while 12-weeks after end of treatment, 94% of patients achieved SVR while 6% of patients were relapses.

Conclusion: Non-PEGylated interferon or PEGylated IFN in combination with ribavirin (RBV) was the main drugs used for the management of HCV infection. 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, Liver fibrosis regression as a consequence of viral eradication is supported by the reduction of inflammatory mediators that leads to apoptosis of my fibroblasts, and occurs by the inactivation of stellate cells. 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. This study showed significant improvement in serum fibronectin levels after antiviral treatment with statistically significant difference in SVR12 patients. We also found that

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each of ALT, AST and baseline liver status (cirrhotic or no cirrhotic) can predict relapse in HCV treated patients. As compared to pre-treatment values. 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.

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