Evaluation of Fibrosis Regression Using FIB-5 Score in HCV and HBV Positive Patients after Treatment and Virus Suppression Respectively

Thesis

Submitted for partial fulfillment of Master Degree of Tropical Medicine

By

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2021

Summary and Conclusion

CLD is a major cause of morbidity and mortality worldwide; with 2 million individuals dying of liver disease yearly. The most common culprits are chronic HBV, chronic HCV, NAFLD and ALD.

LF is an ongoing chronic liver condition that develops as a result of wound healing response following long-standing liver injury. Liver parenchyma undergoes architectural re-modeling including fibrillar ECM accumulation with nodular regeneration.

With persistent injury to liver parenchyma because of CLD, excessive and abnormal ECM deposition results in progressive replacement of the normal elastic collagenous liver parenchyma by LF. Untreated LF ends up in cirrhosis and its associated complications, including hepatic cell failure, PH and HCC which usually has the worst outcomes and high mortality.

Fibrosis reversal differs from fibrosis regression; the word reversal of cirrhosis is used to indicate complete restoration of normal architecture after establishment of cirrhosis while regression of fibrosis or cirrhosis means that the fibrosis content is less than earlier.

The reversal of cirrhosis depends on three main mechanisms:

I. ECM degradation.

II. Vanishing fibrotic tissue replaced by newly formed hepatocytes (regeneration).

III. Lobular architecture restoration with a trans-lobular blood flow.

Knowing the disease state is important to make a decision on therapeutic choices and predicting prognosis. Despite considering LB as the standard base for assessing LF, yet it has significant limitations including invasiveness; hence, there was a growing need for alternative accurate and non-invasive methods for LF diagnosis and

staging. Over the last few decades, non-invasive diagnostic approaches of LF have been developed, that overcome some limitations of LB.

NITs such as FIB-4 utilize age, ALT, AST and platelet count. Recently FIB-5 using albumin, ALP, AST to ALT ratio and PLT has been used for detecting of LF and predicting severe fibrosis or cirrhosis.

Our aim of the study was to:

1- Detect fibrosis regression after HCV treatment by DAAs and HBV suppression by NAs using FIB-5 score.
2- Evaluate the accuracy of FIB-5 score as a validated NIT of fibrosis.

This study recruited 100 patients with history of chronic hepatitis; 50 HCV patients who received and finished DAAs and 50 HBV patients on treatment according to the national program for treatment of HCV and Egyptian guidelines for HBV treatment.

Demographic, clinic-laboratory and NITs (FIB-4 and FIB-5) data were collected. We then compare it between HCV and HBV patients to detect the difference between these two groups. For each group of patients we classified them according to fibrosis regression into two groups. Then we studied the difference between the aforementioned data between the two new groups.

Sensitivity and specificity test for FIB-5 level post-treatment in diagnosis of fibrosis regression in HCV patients were (88.2%, and 63.6% respectively) at cutoff value equals -14.695 while sensitivity and specificity test for FIB-5 level post-treatment in diagnosis of fibrosis regression in HBV patients were (57.1%, and 94.4% respectively) at cutoff value -8.68.

To conclude, FIB-5 is both specific and sensitive test to assess fibrosis regression in chronic hepatitis patients after and on treatment.