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Diagnostic Performance of Tumor Associated Trypsin Inhibitor in Early Detection of Hepatocellular Carcinoma in Patients with Hepatitis C Virus

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Abstract : Abstract— Background/Aim: Hepatocellular carcinoma (HCC) is often diagnosed at advanced stage where effective therapies are lacking. Identification of new scoring system is needed to discriminate HCC patients from those with chronic liver disease. Based on the link between tumor associated trypsin inhibitor (TATI) and HCC progression, we aimed to develop a novel score based on combination of TATI and routine laboratory tests for early prediction of HCC. Methods: TATI was assayed for HCC group (123), liver cirrhosis group (210) and control group (50) by Enzyme Linked Immunosorbent Assay (ELISA). Data from all groups were retrospectively analyzed including α feto protein (AFP), international normalized ratio (INR), albumin and platelet count, transaminases, and age. Areas under ROC curve were used to develop the score. Results: A novel index named hepatocellular carcinoma-vascular endothelial growth factor score (HCC-TATI score) = 3.1 (numerical constant) + 0.09 ×AFP (U L-1) + 0.067 × TATI (ng ml-1) + 0.16 × INR – 1.17 × Albumin (g l-1) – 0.032 × Platelet count × 109 l-1 was developed. HCC-TATI score produce area under ROC curve of 0.98 for discriminating HCC patients from liver cirrhosis with sensitivity of 91% and specificity of 82% at cut-off 6.5 (ie less than 6.5 considered cirrhosis and greater than 4.4 considered HCC). Conclusion: Hepatocellular carcinoma-TATI score could replace AFP in HCC screening and follow up of cirrhotic patients.

Keywords : Hepatocellular carcinoma, cirrhosis, HCV, diagnosis, TATI
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