Summary

Hepatocellular carcinoma (HCC) is a major health problem worldwide, with more than 500,000 cases diagnosed annually and up to 80% of HCCs develop against a background of cirrhosis of the liver. Laminin is one of the main glycoproteins of the basement membrane and participates in a series of biological phenomena as adhesion, migration, cellular differentiation and growth. Syndecan-1 (CD138), a protein found on cells and in the extracellular matrix, participates in cell proliferation, cell migration and cell–matrix interactions.

The aim of this study is to test whether plasma Syndecan-1 and laminin could serve as non-invasive marker for detection of liver fibrosis in patients with hepatocellular carcinoma and thereby reduce the need for liver biopsy.

The present study was conducted on 50 subjects divided into 2 groups; group I included 20 healthy normal control subjects and group II included 30 HCC. Each subject included in the study had undergone detailed history taking and thorough physical examination, abdominal ultrasound and biochemical analysis for determination of liver function tests (AST, ALT, GGT, total bilirubin) by colorimetric assay, Plasma Laminin and Syndecan-1 (by ELISA) and alpha fetoprotein (by immunometric assay) and liver biopsy for hepatocellular patients.

In the current study, the ability of a novel biomarker, syndecan-1, to predict liver fibrosis in HCC patients was investigated. Levels of syndecan-1 were significantly higher in group II (HCC patients) when compared to group I (control subjects) ($p<0.0001$). Also levels of syndecan-1 were significantly higher in F4 group when compared to both

F2 and F3 (P<0.05). No significant difference between F3 when compared to F2 (P>0.05).

In the present study, correlation coefficient between Syndecan-1 and other studied parameters in group II was performed. There was a positive statistically significant correlation between syndecan-1 when compared to GGT (P<0.002). Also, there was a positive statistically significant correlation between syndecan-1 when compared to fibrosis stage (P<0.0001). Linear Regression was performed to show the significant predictors affecting plasma syndecan-1 levels in HCC patients. Only GGT (P < 0.0001) was found to be a significant predictor for syndecan-1.

In the current study, the ability of laminin as a novel plasma marker to predict liver fibrosis in HCC patients was investigated. Levels of laminin were significantly higher in group II (HCC patients) when compared to group I (control subjects) (p<0.0001). Also, levels of laminin were significantly higher in F4 group when compared to both F2 and F3 (P<0.05). No significant difference between F3 when compared to F2 (P>0.05).

In the present study, correlation coefficient between Laminin and other studied parameters in group II was performed. Plasma Laminin was significantly correlated with ALT (P<0.0001) and total bilirubin (P<0.01) in HCC patients. Also, there was a positive statistically significant correlation between laminin when compared to fibrosis stage (P<0.0001). A linear regression was also performed to show the significant predictors affecting plasma laminin levels in Group II (HCC patients); AST, ALT, GGT, T.bilirubin, albumin, AFP. Only ALT (P<0.0001) was found to be a significant predictor for laminin.

Conclusion: the present study suggests that plasma levels of Syndecan-1 and laminin may serve as a marker for fibrosis stage in patients with hepatocellular carcinoma.