

## Non invasive Markers to Predict liver Damage Among Patients with Chronic HBV, Hilla City-Iraq

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### Abstract:

**Objective:** Hepatitis B is an infectious disease caused by the hepatitis B virus (HBV) which affects the liver. It can cause both acute and chronic infections. Chronic HBV (CHB) infection is usually defined as detectable hepatitis B surface antigenemia (HBsAg) for a period of six months or more. The current study aims to investigate the serum level of total IgA, IgM, IgG, C3, C4, GPT, GOT, GGT, Ceruloplasmin, Haptoglobin and Transferin as a predictor for chronic HBV in Hilla City- Iraq.

**Methodology:** Serum samples were collected from the patients who sent to the central lab in Hilla City during a period of six months. Only samples positive for HBsAg and total anti-HBc Ab were used for the study. This study include 24 patients with age (40.85±6.87 year) and 12 healthy control (40.42±9.06 year).

**Results:** Measurement of serum levels for ALT, AST, GGT, Haptoglobin, Ceruloplasmin and Transferin, C3, C4, IgG, IgM and IgA were done and the results revealed significant difference of ALT level (22.90±11.16 for CHB), (18.49±2.00 for control) and AST level (32.23±16.46 for CHB), (17.78±4.39 for control). when compared between CHB and healthy control and non significant for GGT level (15.02±7.90 for CHB), (15.45±5.01 for Control). Although there is a significant differences between CHB and health control but the results remain within the normal values which indicate stable non damaged liver. Haptoglobin, Ceruloplasmin and Transferin were investigated among CHB and healthy control and the results revealed no significant differences among CHB and healthy control. (85.12±45.97 for CHB, 97.50±59.84 for control), (28.34±11.98 for CHB, 29.31±8.15 for control), (216.54±75.11 for CHB, 203.71±54.36 for control) respectively. Serum level for C3 and C4 among CHB and healthy control record no significant differences in which (88.82±35.24 and 32.00±14.85 mg/dl for CHB) and (71.61±28.43 and 23.81±16.92 mg/dl for healthy control) for C3 and C4 respectively. The serum level of IgG, IgM and IgA were significantly increased when compare between CHB and health control in which (1309.21±501.06, 144.37±67.03 and 227.58±69.95 mg/dl for CHB) and (395.83±433.54, 73.29±92.47 and 93.78±23.04 mg/dl for health control) for IgG, IgM and IgA respectively.

**Conclusion:** The current study conclude that the serum levels of ALT, AST, GGT, Haptoglobin, Ceruloplasmin and Transferin are very important non invasive predictor for liver damage in CHB patients in patients who refuse of afraid from liver biopsy.

**Keywords:** HBV, HBsAg, Anti-HBc Ab, Haptoglobin, ALT.