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**Summary**

This study was conducted from 1st. October 2003 to 30 August 2004, in the Public Health Laboratory and Baquba General Hospital, to determine the C-reactive protein titers among patients with acute and chronic hepatitis B virus (HBV) infection in relation to healthy subjects. The study also aimed to correlate these titers with liver function test parameters, and also to find out the validity of C-reactive protein titer as a diagnostic or monitoring marker in these patients.

Three groups were included; 105 patients with laboratory confirmed acute HBV infection, 37(35.2%) were females with mean age ( $27.2 \pm 17.6$ ) years, and 68 (64.8%) were males with mean age ( $26.2 \pm 15.4$ ) years. 105 patients with laboratory confirmed chronic HBV infection, 36(34.3%) were females with mean age ( $35.2 \pm 12.2$ ) years, and 69(65.7%) were males with mean age ( $32.4 \pm 11.8$ ) years. Additionally, 117 apparently healthy individuals were enrolled as a control group, of those 57(48.7%) were females with mean age ( $23.2 \pm 5.9$ ) years, and 60(51.3%) were males with mean age ( $28.7 \pm 5.9$ ) years.

Patients with laboratory confirmed acute HBV infection, beside the clinical and biochemical evidence, they were HBsAg and anti-HBcIgM antibody positive. While patients with chronic HBV infection were HBsAg positive. Titration of C-reactive protein was determined using Tube -agglutination tube dilution method. Liver function tests were assessed by enzymatic biochemical procedures.

The results showed that the median of CRP titer in healthy controls, patients with acute HBV infection and patients with chronic HBV infection were 1:2, 1:64 and 1:16 respectively. The difference in the median of CRP titers among these three study groups was statistically significant  $P$  (Kruskal-Wallis)  $< 0.001$ . Additionally, paired comparison of the median CRP titer between each two groups was also statistically significant  $P$  (Mann-Whitney)  $< 0.001$ .

Since 112 (95.7%) of the healthy controls had CRP titer of  $\leq 1:8$ , thus the baseline concentration was 16 mg/l at 95<sup>th</sup> percentile. Similarly, the 95<sup>th</sup> percentile CRP baseline concentration among patients with acute HBV infection was 1024 mg/l, while the 95<sup>th</sup> percentile CRP baseline concentration among patients with chronic HBV infection was 64 mg/l.

The validity of CRP test at a titer 1:16 cut off value (32 mg/l) was found to be highly sensitive (100%) and highly specific (96%) for differentiating between healthy controls and patients with acute HBV infection.

The validity of CRP test at a titer 1:16 cutoff value (32 mg/l) was found to be reasonably sensitive (55 %) and highly specific (96%) for differentiating between healthy controls and patients with chronic HBV infection.

The validity of CRP test at a titer 1:64 cutoff value (128 mg/l) was found to be acceptably sensitive (72 %) and highly specific (95 %) for differentiating between patients with chronic HBV infection from those with acute HBV infection.

These results suggest that CRP test at specific cutoff values may be used to differentiate between acute and chronic HBV infection when the clinical suspicion is 50%.

The results also revealed that the difference in the median of liver function tests; namely serum total bilirubin, direct and indirect bilirubin, serum alanin aminotransferase (ALT), serum aspartate aminotransferase (AST), serum total protein and serum alkaline phosphatase were significantly different among the three study groups P (Kruskal-Wallis)

Spearman's linear correlation analyses revealed that the CRP titers were significantly correlated with liver function test parameters among the three study groups, except with serum alkaline phosphatase (P=0.42) and indirect serum bilirubin (P= 0.14). Suggesting that CRP titration could be used as a surrogate marker for monitoring the disease progression in patients with HBV infection.