

## ABSTRACT

**Aim:** To study the correlation of HBsAg quantification levels with HBV DNA in patients with chronic hepatitis B infection. Also to study the role of qHbsAg levels in predicting the response to antiviral therapy in chronic hepatitis B infection.

**Materials and methods** : one year prospective study conducted between January 2014-2015 at department of digestive health and diseases, kilpauk medical college, Chennai. All patients of chronic hepatitis B infection were included in the study. Baseline liver function tests, HbsAg quantification and HBVDNA levels were done. In treatment group the above values are repeated every 12 weeks for 36 weeks.

**Results** : Total of 160 patients were included and among them 24 were in treatment group. The results are as follows. In the treatment naïve group, serum HBsAg levels are higher in HBeAg positive group than HBeAg negative group with a mean of 4.25logIU/ml and 2.81logIU/ml respectively. So qHBsAg levels had significant correlation with HBVDNA levels in HBeAg positive group ( $P < 0.001$ ) but not in HBeAg negative group. Serum qHBsAg levels also differentiates immune-tolerant from immune-clearance phase with mean values of 4.59logIU/ml and 3.74logIU/ml respectively ( $P=0.038$ ). We observed that Serum

HbsAg levels are higher in active chronic hepatitis B group than inactive carriers with a values of 4.20logIU/ml and 2.64logIU/ml respectively ( P=0.002). From the above ROC curve, serum HBsAg level of 3.01logIU/ml indicates high chances of replicative state with 96% sensitivity and 76% specificity. In treatment with NUC's we observed decline in serum qHbsAg levels are slow and less pronounced than HBVDNA in both HBeAg positive &HBeAg negative group.

**conclusion:** High serum qHBsAg levels has a good correlation with HBV DNA levels in HBeAg positive than HBeAg negative patients. Single point estimation of qHBsAg levels can predict replicative state and can act as a surrogate marker for the replicative state. Higher qHBsAg levels also differentiates inactive CHB from active CHB and can replace HBV DNA levels in differentiating the two. Estimation of qHBsAg is easy and cost effective. Serum qHBsAg levels decline slowly with NUC's than DNA levels and decrease in serum qHBsAg levels does not correlate with decrease in HBV DNA levels.