Correlation between HBSAG quantification and HBV genotypesin chronic HBV infections

ABSTRACT

Accumulated data has been proposed that viral genotypes and sub genotypesplay an important role in clinical outcome and antiviral monitoring of chronic HBV infection. Genotyping and quantitating of HBV DNA levels molecularly is relatively expensive. On the other side, serum HBsAg quantification has been recently standardized by automated quantitative assays leading to revived interest in the clinical utilization of this marker for diagnosis using sensitive and reliable commercial assays. Several studies have referred to the kinetics of HBsAg to predict response to antiviral therapy. Thus, a cheaper laboratory test as a surrogate diagnostic marker might simplify patients' management. Objectives: to evaluate whether quantitative HBsAg levels correlate with HBV genotypes in Malaysian CHB patients. Patients and Methods: In this cross-sectional study, fifty serum samples from patients with hepatitis B were used, however those tested positive for antibodies to HCV and HDV were excluded. The serum HBsAg level was quantified by Elecsysassay. In addition, HBV DNA load was measured by real-time polymerase chain reaction whereas identification of HBV genotypes was done by direct sequencing. Results: Of 50 patients, 31 were males (44%) and 19 females (27%); the mean age was37 ± 12 years. Forty-two (42) patients had HBsAg level >100 IU/mL.Eightypercent (40) were HBeAg-negative while 20% (10) were positive. Genotyping showed that 22 patients had genotype C (44%), and 18 patients were of genotype B (36%). Applying Mann-Whitney test, HBs Agtiters correlated differentially with HBV genotypes C& B. ($p<0.05$). By Non-parametric T test, there was no significant correlation between HBsAg levels and HBV DNA levels ($p<0.05$). Conclusions: the statistically significant association between levels of HBsAg and HBV genotypes was observed especially for genotype C. Hence, HBsAg level could be a useful serological marker to predict the genotypes B and C of HBV and thus possibly anticipate the response to treatment with antiviral drugs.

Keyword: Hepatitis B genotypes; Chronic hepatitis b virus infection; HBsAg quantitation