

A SIMPLE ELISA TECHNIQUE TO STUDY THE BINDING OF HBsAg WITH POLYMERISED HUMAN SERUM ALBUMIN

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In the last few years, it was confirmed that HBsAg particles from sera with HBeAg have very high binding affinity with polymerised human serum albumin (PHSA). This binding between HBsAg and PHSA was assumed to play a vital role in the attachment of hepatitis B virus (HBV) to hepatocyte membrane leading to its entry into the hepatocyte. The present study was undertaken to evaluate this binding in the serum samples from different HBV infections with a newly developed ELISA technique. This ELISA method is based on the binding of HBsAg from test samples with PHSA coated in the wells of microtitre plate and determination of bound HBsAg by commercially available anti-HBs-HRPO conjugate. The minimum concentration of HBsAg detectable by this assay was 0.2 ug/ml. By using this technique, the binding activity was evaluated in the HbsAg positive serum samples, both with and without HBeAg, from acute viral hepatitis (42), fulminant hepatitis (12), cirrhosis (7), chronic active hepatitis (2) and asymptomatic carriers (31). The binding activity was detected in 80% of HBeAg positive patients, 70.9% HBeAg negative patients and 58.3% anti-HBe positive patients. The difference between HBeAg positive and HBeAg negative was statistically not significant. The findings are contradictory to the belief that HBeAg increases the binding affinity to PHSA.