

Heterogeneity of hepatitis B virus surface antigen in sera of patients with acute hepatitis B infection in relative content of the antigenic determinants a and preS2.

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Heterogeneity of hepatitis B virus surface antigen in sera of patients with acute hepatitis B infection in relative content of the antigenic determinants a and preS2.

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Abstract

Using five ELISA variants we have analyzed the ratios of the antigenic determinants 'a' (a-D), preS2 (preS2-D) and the polymerized human serum albumin binding domains (PHSA-BD) in the hepatitis B virus surface antigen (HBsAg) particles contained in sera of three patients with acute viral hepatitis B. Quantitative relations between the a-D, preS2-D and PHSA-BD were shown to differ in these sera. Population of the HBsAg particles in each of the sera appeared heterogeneous in respect to the PHSA-BD activity. The HBsAg particles with high affinity PHSA-BD prevailed in one serum. An additional class of particles with low affinity to PHSA or complete lack of the PHSA-BD was present in the remaining sera. The HBsAg particles carrying the high affinity PHSA-BD were characterized by an elevated (and almost constant for the three sera) surface density of the preS2-D. The results have led us to the conclusion that the existence of the preS2-D on the surface of the HBsAg particles is necessary but insufficient for the high affinity binding of the HBsAg to PHSA. A model for the interaction between the preS2-D carrying HBsAg particles and PHSA is presented.

Reference

M. Irshad, B.M. Gandhi, T.C. Chawla, S.K. Acharya, Y.K. Joshi, B.N. Tandon, Studies on HBsAg binding with polymerised human serum albumin by ELISA, J. Virol. Methods 16 (1987) 75-85.