

BRIEF ARTICLES

Hepatitis B virus subgenotypes and basal core promoter mutations in Indonesia

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Abstract

AIM: To identify the distribution of hepatitis B virus (HBV) subgenotype and basal core promoter (BCP) mutations among patients with HBV-associated liver disease in Indonesia.

METHODS: Patients with chronic hepatitis (CH, $n =$

61), liver cirrhosis (LC, $n = 62$), and hepatocellular carcinoma (HCC, $n = 48$) were included in this study. HBV subgenotype was identified based on S or preS gene sequence, and mutations in the HBx gene including the overlapping BCP region were examined by direct sequencing.

RESULTS: HBV genotype B (subgenotypes B2, B3, B4, B5 and B7) the major genotype in the samples, accounted for 75.4%, 71.0% and 75.0% of CH, LC and HCC patients, respectively, while the genotype C (subgenotypes C1, C2 and C3) was detected in 24.6%, 29.0%, and 25.0% of CH, LC, and HCC patients, respectively. Subgenotypes B3 (84.9%) and C1 (82.2%) were the main subgenotype in HBV genotype B and C, respectively. Serotype adw2 (84.9%) and adr_q+ (89.4%) were the most prevalent in HBV genotype B and C, respectively. Double mutation (A1762T/G1764A) in the BCP was significantly higher in LC (59.7%) and HCC (54.2%) than in CH (19.7%), suggesting that this mutation was associated with severity of liver disease. The T1753V was also higher in LC (46.8%), but lower in HCC (22.9%) and CH (18.0%), suggesting that this mutation may be an indicator of cirrhosis.

CONCLUSION: HBV genotype B/B3 and C/C1 are the major genotypes in Indonesia. Mutations in BCP, such as A1762T/G1764A and T1753V, might have an association with manifestations of liver disease.

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Key words: Basal core promoter mutation; Hepatitis B virus; Indonesia; Liver disease; Subgenotype

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