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Study of mutations in S gene region and related overlapping polymerase region of hepatitis B virus in chronic hepatitis B patients, from Southeast of Caspian Sea, Iran

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Introduction: Hepatitis B virus (HBV) represents a major health problem worldwide, developing cirrhosis and hepato-cellular carcinoma (HCC) in some cases. Mutations in the HBV surface (S) and polymerase regions has been observed frequently associated with the virus replication, vaccine and immune escape mutations, drug resistance and clinical outcomes, respectively. This study aimed to investigate mutation in these regions of chronic HBV patients (CHB) in Golestan province, Northeast of Iran.

Materials & Methods: This cross sectional study is done on 65 CHB (Chronic HBV) patients (HBs Ag positive for more than 6 months), which were under Lamivudine treatment. HBV-DNA was extracted and PCR was performed using specific primers for four regions including S gene and polymerase region. Positive PCR products were subjected to automated sequencing. Alignment was applied using reference sequence from Gene Bank database with AB033559 accession number.

Results: Results showed that 11% of our patients had mutations in the “a” determinant of S gene, one case with G145R mutation was detected, which is called “Escape Mutation” and is reported for the first time from IRAN. Mutations at the YMDD and FLLAQ motifs in the polymerase gene of HBV detected in 12 of 65 patients (18.46%) which were under treatment with Lamivudine.

Conclusion: Mutations in polymerase and S regions of the HBV genomes in this Iranian CHB population is very important to predict the outcome of infection, the administration of antiretroviral drugs, especially it is very useful for predicting the efficiency of HBV vaccines.

Biography

Sareh Zhand is a PhD candidate of Microbiology at Shahid Beheshti University of Iran. She specially works on hepatitis B virus gene mutations and has published more than 5 papers in reputed journals and has more than 18 abstracts presented in international congresses and is the winner of the first prize for oral presentation in the 4th International Hepatitis Congress and winner of the first prize for poster presentation in the 6th International Hepatitis Congress.

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