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HBV eradication still is a great challenge due to the occurrence of mutations in a determinant HBs, Pre-S1 and Pre-S2 regions**Makvandi Manoochehr***Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran*

It estimated more than 257 million people are chronically infected with HBV worldwide. HBV vaccination is only preventive measurement since no effective treatment is available against HBV infection. Iran is classified as low (0.24% to intermediate (2.2%) prevalence of HBV in different regions. In Iran, mass vaccination against HBV infection started in 1993 and results in decreasing prevalence of the disease in the country. In 2016 the World Health Organization set the goal of eliminating hepatitis B globally by 2030. The vertical transmission of HBV is becoming increasingly dominant. The occurrence of mutations in "a determinant region" of S and Pre-S1 gene may results in inefficacy of HBV vaccination. The aim of this study was to evaluate occurrence of mutations in S, Pre-S1 and Pre-S2 regions of HBV genome among untreated HBV patients in Ahvaz city, Iran.

Material and methods: In the Sera samples with chronic hepatitis B virus infection were collected from 37 untreated patients who referred to Ahvaz hospitals during 2018. All samples were tested for HBsAg, anti-HBc, HBeAg and anti-HBe using ELISA kits. Randomly five samples (three females and two males) selected for full-length genome sequences. Four samples HBeAg positive, one sample HBeAg negative. The full-length HBV genome was cloned into the pTZ57R/T vector the phylogenetic tree was constructed for all isolates.

Results: Phylogenetic analysis revealed that all isolates from Ahvaz were clustered with HBV sub genotype D1 and D3. Table 1 shows the occurrence of mutations in S, Pre-S1 and Pre-S2 of the HBV isolates.

Conclusion: Five mutations (T126N, T127P, A128G, P142L and N146K) were located in the 'a' determinant domain and several mutations in pre-S1 and Pre-S2 regions (table 1). It is ambiguous whether the occurrence of such mutations in S, pre-S1 and Pre-S2 regions could reduce the HBV vaccine efficacy, to decide on this issue requires further investigation.

Key Words: Blood flow, temperature, physics, heat energy

Biography

Manoochehr Makvandi has established virology laboratory in 1993 and inaugurated MSc (virology, 1998) and PhD (virology, 2006) courses in Virology Dept. Ahvaz Jundishpur University of Medical Sciences, Ahvaz, Iran. He is interested in design and development of viral vaccine using DNA-based vaccine (pVAX vector) for HEV, HPV16 and HPV18 vaccines. He is also interesting in molecular diagnosis of clinical virology and occurrence of mutations in hypervariable regions of some viruses such as HBV (OBI), HCV (OCI), HPV16, and HPV 18, BKV and JCV, human adenoviruses, and SARS CoV-2.

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