Abstract:

Background:

Hepatitis B is the most common infectious disease caused by Hepatitis B virus (HBV) that can leads to liver cirrhosis and hepatocellular carcinoma. India is the second largest global pool of chronic hepatitis B viral infection. Acute hepatitis B is defined as a short term infection which occurs within 6 months after a person gets infected with the virus. Persistence of HBsAg for atleast 6 months with or without concurrent HBeAg indicates chronic hepatitis B infection. Serological markers tests done for the diagnosis of HBV infection includes HBsAg, antiHBs, antiHBc- IgM, antiHBc- IgG, HBeAg and anti HBe. Several factors are involved in the disease progression of HBV infection (persistence and clearance) such as virological factors, genetic factors, immunological factors and environmental factors, and the exact mechanism is not clearly understood. Host immune response plays an important role in the susceptibility and the outcome of HBV infection.

Aim:

The aim of this study is to investigate the frequency of HLA class II alleles and their association in severity of Hepatitis B viral infection.

Materials and methods:

A total number of 53,374 blood samples were received to screen HBsAg. The prevalence of HBV was determined by screening HBsAg by rapid immunochromatographic method. A total of 182 (HBsAg positive patient and healthy controls) were included in the study. Detailed demographic profile, including history of previous hepatitis infection, previous blood transfusion and other related details were collected and documented using a structured questionnaire. Blood was screened for HBV seromarkers (HBsAg, HBeAg, AntiHBc Total, AntiHBc IgM and AntiHBs) using ELISA method. HLA DRB1*07:01, HLA DQB1*03:01 and HLA DPB1*09:01 alleles association in Acute Hepatitis B patients (AHB), Chronic Hepatitis B patients (CHB) and healthy controls were analysed by using multiplex polymerase chain
reaction/ sequence specific primer (PCR/SSP) technique.

**Results:**

A total of 53,374 serum samples were screened for HBsAg antigen by rapid card method. Out of which, 31,709 (59.4%) were males and 21,665 (40.6%) were females. The prevalence rate of seropositive of HBsAg in 3 year study was 0.50%. A total of 182 patients were enrolled in the study. Among them, 107 (58.8%) were from inpatient departments and 75 (41.2%) were from outpatient departments. Majority of them belonged to age group 28-37 years (32.4%). Based on the serological marker tested, 32 and 150 were suffering from acute and chronic HBV infection. Among 150 chronic hepatitis B patients, 73 (48.7%) showed highest association with HLA DQB1*03:01 allele.

**Conclusion:**

The screening of hepatitis B viral infection among the patients attending a tertiary care hospital enlightens the details of seropositive being unnoticed. HLA class II allele is one of the important factors determining the outcome of HBV infection. HLA DQB1*03:01 is closely related with susceptibility to chronic hepatitis B infection.