

Current Status and Unique features of HBV related liver diseases in Korea

Hyung-Soo Kim

In this presentation, I'd like to provide an overview of the current status and unique features of HBV (hepatitis B virus) related liver diseases in Korea compared with western countries based on our data.

HBV infection is a serious global health problem with 2 billion people infected worldwide, and more than 350 million suffering from chronic HBV infection. Korea is an endemic area of HBV infection. In 1980s, the seroprevalence of hepatitis B surface antigen was about 8%. After the introduction of universal HBV vaccination in 1995, it has declined over time and decreased to about 3% in late 1990s. However, HBV infection is still the most common cause and accounts for 70-80% of chronic liver disease including hepatocellular carcinoma (HCC), a leading cause of malignancies in Korea. The main route of HBV infection is a vertical transmission of HBV from an infected mother in Korea. It accounts for at least 30% based on our data. Hepatitis B e antigen (HBeAg) seroconversion is an important event in the natural course of chronic hepatitis B (CHB). To date, older age, high serum ALT levels, genotype B (*vs.* C) and ethnicity (other than Asia) have been regarded as favorable factors for spontaneous HBeAg seroconversion. Our data suggests that transmission mode (non-vertical) and low serum HBV DNA levels are independent predictors for HBeAg seroconversion. As for viral factors of Korean CHB patients, virtually all HBVs are genotype C, and precore or core promoter mutants are found in up to 90% of the patients, especially 84.3% even in HBeAg positive CHB patients. The mutants are more frequent in Koreans than in Caucasians. Also, preS deletion mutations are detected in 25.2% of Korean CHB patients, which are much higher than in Caucasians. In the context of host factors, multiple HLA class II alleles have been reported to be associated with HBV clearance. Especially, DRB1*1302 and DQB1*0609 were associated with viral clearance in our data. Taken together, it is natural that treatment response is different between Caucasians and Koreans. The efficacy of antiviral for HBV such as interferon and lamivudine in Koreans, is similar to that in Caucasians in the aspects of HBeAg seroconversion and ALT normalization. However, antivirals induced HBeAg seroconversion is not durable in Korean CHB patients, unlike western CHB patients. As for tumor markers for HCC, PIVKA-II, an alternative diagnostic marker of alpha-fetoprotein (AFP), is very useful prognostic marker in HBV related HCC.

In summary, the prevalence of HBV infection in Korea is still higher than in western countries, although it has been declined. Moreover, HBV infection is still a leading cause of chronic liver disease and HCC. Korean CHB patients have a variety of unfavorable viral factors such as genotype C, frequent precore or core promoter mutants, and preS deletion mutations. Consequently, there is a difference in treatment response between Caucasians and Koreans. Therefore, different treatment strategy will be warranted for Korean CHB patients.