Studies on chronic type B, C and D viral hepatitis : molecular epidemiology, pathogenesis, natural history and treatment

Abstract:

I. HBV:

1. **Precore/basal core promoter mutants and hepatitis B viral DNA levels as predictors for liver deaths and hepatocellular carcinoma (World J Gastroenterol 2006;12:6620-6).**
   A retrospective study in 400 chronic hepatitis B patients showed that high levels of baseline serum HBV DNA are associated with non-hepatocellular carcinoma-related deaths of liver failure, while genetic mutations in the basal core promoter and precore regions are predictive for development of HCC.
2. **Discontinuation of lamivudine treatment for hepatitis flare after kidney or heart transplantation in hepatitis B surface antigen-positive patients: A retrospective case series (Clin Ther. 2006;28:1327-34).**
   Several parameters and liver-related mortality of patients with post-transplantation hepatitis flare who discontinued lamivudine were compared with those in a group of patients who continued lamivudine. The results showed that liver-related mortality was not increased in these patients than those who continued lamivudine treatment.
3. **Viral factors correlate with hepatitis B e antigen seroconverson in patients with chronic hepatitis B (Liver Int. 2006;26:949-55).**
   We comprehensively studied HBV factors in 25 patients with sustained HBeAg SC and seven control patients with sustained loss of HBeAg, and found that viral factors correlate with the development of sustained HBeAg SC or loss.
4. **Role of hepatitis B virus precore/core promoter mutations and serum viral load on noncirrhotic hepatocellular carcinoma: a case-control study (J Infect Dis. 2006;194:594-9).**
   We determined HBV factors in noncirrhotic hepatocarcinogenesis by comparing 44 patients with HBV-related noncirrhotic HCC, 45 patients with chronic hepatitis B, and 42 patients with HBV-related cirrhotic HCC. Our results suggest that BCP T1762/A1764 mutation and higher viral load may be involved in the carcinogenesis of cirrhotic and noncirrhotic HCC.
5. **Higher cut-off index value of immunoglobulin M antibody to hepatitis B core antigen in Taiwanese patients with hepatitis B (J Gastroenterol Hepatol. 2006;21:859-62).**
   We studied the optimal index value of IgM anti-HBc in Taiwanese subjects with hepatitis B, and found that the cut-off index value of IgM anti-HBc to differentiate acute hepatitis B from chronic hepatitis B with acute flare among Taiwanese patients should be set at 2.4-2.5.
6. **Hepatitis B post-partum e antigen clearance in hepatitis B carrier mothers: Correlation with viral characteristics (J Gastroenterol Hepatol. 2006;21:605-9).**

We studied 40 consecutive HBeAg-positive carrier mothers and found that post-partum e antigen clearance in HBeAg-positive carrier mothers is closely associated with prepartum low HBeAg titer or HBV-DNA level.

7. **Role of hepatitis B viral load and basal core promoter mutation in hepatocellular carcinoma in hepatitis B carriers (J Infect Dis. 2006;193:1258-65).**
   We compared HBV factors in 160 chronic hepatitis B virus (HBV) carriers and 200 patients with HCC, and found that high HBV load and BCP T1762/A1764 mutation are important in hepatocarcinogenesis.
8. **Interferon alpha-2b with and without ribavirin in the treatment of hepatitis B e antigen-positive chronic hepatitis B: a randomized study (Hepatology. 2006;43:742-9).**
   We enrolled 119 such patients in a randomized study. 59 patients received 5 MU IFN-alpha2b daily for 4 weeks followed by 5 MU three times a week for 28 weeks, plus 1,200 mg ribavirin daily. 60 patients received the same dosage of IFN plus placebo. Our results showed that for the treatment of HBeAg-positive chronic hepatitis B, adding ribavirin does not seem to increase the efficacy of IFN.
9. **Evolution of Hepatitis B virus in an acute hepatitis B patient co-infected with genotypes B and C (J Gen Virol. 2006;87:39-49).**
   We studied the evolution of HBV strains in an acute, self-limited hepatitis B patient co-infected with genotypes Ba (B2) and C.
10. **Therapeutic implications of hepatitis B virus genotypes (Liver Int. 2005;25:1097-107).**

II. HCV:

1. **Changes of soluble CD26 and CD30 levels correlate with response to interferon plus ribavirin therapy in patients with chronic hepatitis C (J Gastroenterol Hepatol. 2006;21:1789-93).**
   We quantified soluble CD26 and CD30 levels before and 6 months after combination therapy in 33 chronic hepatitis C patients and in 20 healthy controls. Our results showed that chronic hepatitis C patients have a weak Th1 response as reflected by lower soluble CD26 levels and the levels are even lower in non-sustained responders. In sharp contrast, downregulation of Th2 response with serial changes of soluble CD30 level is associated with successful treatment of HCV infection.
2. **Noninvasive tests for the prediction of significant hepatic fibrosis in hepatitis C virus carriers with persistently normal alanine aminotransferases (Liver Int. 2006;26:1087-94**).
   We studied the diagnostic value of Doppler and various noninvasive indices in predicting significant hepatic fibrosis in HCV carriers with persistently normal alanine aminotransferases (PNALT). We found that API is the most useful index among Doppler and biochemical indices for the detection of significant hepatic fibrosis in HCV carriers with PNALT levels.
3. **Selective transmission of hepatitis C virus quasi species through a needlestick accident in acute resolving hepatitis (Clin Infect Dis. 2006;42:1254-9).**
   We found a minor HCV variant from a donor was transmitted to the recipient through a needlestick

injury and that it prevailed as the dominant species. The preserved genetic homogeneity of the transmitted viral variants in patients with acute HCV infection may account for their clinical outcomes of resolving hepatitis.

Key words: Hepatitis B, hepatitis C, molecular epidemiology, pathogenesis, natural history, treatment