Burden and significance of HBV in special population

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Chronic infection with hepatitis B virus (HBV) affects > 350 million people, 75% of them live in the Asia Pacific region. The acute insults may be due to superimposed acute viral hepatitis or spontaneous exacerbation or reactivation of viral replication during immunosuppressive therapy. The calculated annual incidence of acute exacerbation (AE) was 28.6 and 10.3%, in HBeAg (+) and anti-HBe (+) respectively. Of them, <5% of AEs may progress to hepatic decompensation with marked jaundice and prolongation of prothrombin time. Spontaneous reactivation of hepatitis B was the major cause of these exacerbations in both HBeAg-positive patients (91.5%) as well as anti-HBe positive patients (62.5%). Early study in patients with AE and decompensation from Taiwan showed that baseline serum bilirubin level below 20 mg/dL at the time of starting lamivudine (LAM) was significantly associated with a lower mortality rate (0% versus 20% in untreated historical controls). These results suggest that oral antiviral therapy should be initiated as early as possible in the setting of acute-on-chronic HBV infection and hepatic decompensation.

Reactivation of HBV replication with decompensation has been reported in 20-50% of patients with chronic HBV infection undergoing cancer chemotherapy or immunosuppressive therapy, especially those containing high-dose steroid or biologic agents such as rituximal (anti-CD20) regiment. High viral load at baseline is the most important risk factor for HBV reactivation. LAM is effective in the treatment of HBV reactivation in HBsAg-positive organ transplantation recipients and cancer patients undergoing chemotherapy, particularly if it is used preemptively. A number of meta-analyses have confirmed that preemptive LAM therapy reduces reactivation of HBV with a risk reduction estimated to be between 79% and 89%. Of note is that both entecavir (ETV) and tenofovir are more attractive candidates given their high potency and extremely low resistance rates. A recent study did show that ETV was more effective than LAM in preventing hepatitis B reactivation (0% of 34 vs 12.4% of 89; p=0.024) in lymphoma patients receiving chemotherapy.

Liver transplantation has become a curable treatment of liver failure and hepatocellular carcinoma (HCC) with excellent 5-year survival. A rapid expansion of liver transplantation within the Asia-Pacific region was reported where HBV is the most common indication for both acute and chronic liver failure. Oral anti-viral agents are effective in HBV suppression in patients undergoing organ transplantation, prevention (in combination with HBIg) of HBV recurrence after liver transplant, and treatment of HBV related allograft infection. Adequate use of these agents has improved patients outcomes.

In conclusion, acute-on-chronic HBV infection resulting hepatic decompensation, either due

to spontaneous AE or under cancer chemotherapy or immunosuppressive therapy, carries a high risk of mortality; however, many cases can be prevented or managed, especially antiviral therapy for chronic HBV infection. Correct diagnosis of the acute-on-chronic insult and the underlying chronic liver disease will direct appropriate care and minimize adverse outcome.