Current Antiviral Therapy in Patients with Chronic HBV Infection

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Chronic hepatitis B virus (HBV) infection is a dynamic state in which HBV replication is the key driving force of disease progression, indicating development of hepatic decompensation, cirrhosis and hepatocellular carcinoma (HCC). The primary aim of therapy is to eliminate or suppress HBV, thereby reduce the activity of hepatitis and the risk of or slow the subsequent progression of liver disease. Currently, 2 interferons and 5 nucleos(t)ide analogues (Nuc) have been approved for the treatment of patients with chronic HBV infection. Treatment with Nuc may rapidly suppress HBV replication with normalization of serum transaminases, improve hepatitis activity and restore liver function thereby rescue patients with hepatic decompensation. Long-term Nuc therapy may also result in reversal of advanced fibrosis/cirrhosis and reduction in disease progression including a ~50% reduction of HCC. The benefits of a finite course of IFN based therapy include a higher HBeAg seroconversion rate, sustained and cumulative response as well as a reduction in the progression of fibrosis and ~35% reduction of cirrhosis 41~61% reduction of HCC development. Prophylactic or preemptive use of Nuc may prevent HBV reactivation and associated hepatitis activity, hepatitis flare or decompensation in patients receiving immunochemotherapy. Hepatitis B surface antigen (HBsAg) seroclearance, a status close to a “cure”, may also occur in patients with a sustained or maintained viral response, especially in those with IFN-based therapy. Pegylated IFN (PEG-IFN) and newer Nucs, entecavir (ETV) and tenofovir (TDF) have even better therapeutic outcomes because of improved efficacy and/or a low risk of drug resistance. However, treatment outcomes are still far from satisfactory and long-term Nuc therapy has problems of cost, compliance, adherence/persistence and unknown side effect(s) with therapy > 10 years. The development of more effective and safe but affordable anti-HBV agents/strategies is needed to further improve outcomes.