Interferon-based Therapy for Chronic Hepatitis B

Chun-Jen Liu

Graduate Institute of Clinical Medicine, Department of Internal Medicine and Hepatitis Research Center
National Taiwan University College of Medicine and Hospital

Hepatitis B virus (HBV) infection is a global health problem. Currently, we have two main antiviral treatment options: peginterferon (PEG-IFN)-alfa, and nucleoside/nucleotide analogues (NUC). Using PEG-IFN or potent NUC such as tenofovir and entecavir, the improvement of long-term outcomes in patients with chronic active hepatitis B has been demonstrated in recent nationwide treatment cohort studies from Taiwan and Hong Kong.

Peginterferon αlfa (PEG-IFN), which includes PEG-IFN αlfa-2a (Pegasys) and PEG-IFN α-2b (Peg-Intron), can be used to treat patients with chronic hepatitis B (CHB). A finite duration of PEG-IFN therapy may lead to long-term viral suppression. Clinically, it is important to identify super-responders and null-responders to PEG-IFN to avoid substantial adverse effects.

From the literature review, it is known that PEG-IFN is more effective for hepatitis B e antigen (HBeAg)-positive patients who have high pre-treatment alanine aminotransferase level, lower HBV DNA level and genotype A (vs genotype D) or genotype B (vs genotype C), as well as those with more favourable viral genomic background, such as precore stop codon or basal core promoter mutants infections in Asian patients and wild-type virus in Caucasian patients. For HBeAg-positive patients and HBeAg-negative patients with genotype D infection, PEG-IFN therapy could be terminated early at week 12 or 24 in primary non-responders if the on-treatment HBsAg decline is not satisfactory. With regard to host factors, single nucleotide polymorphisms of IL28B do not seem to affect the treatment outcomes in Asian patients, but its role in Caucasian patients remains disputed. Overall, most of the identified predictors need validation by large prospective trials. In addition, we need to identify more baseline predictors for super-responders in order to achieve personalised PEG-IFN treatment for CHB.

Recently, different strategies of adding-on or switching to PEG-IFN in patients initially receiving NUC therapy were reported in several clinical trials. The results seemed promising and will be reviewed in this presentation.