Cost-effective PR dual therapy for GT 1 and non-1 patients

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The treatment of the hepatitis C virus (HCV) infection have achieved great advance in recent 20 years. The interferon (IFN)-based treatment of chronic hepatitis C virus (HCV) infection in Taiwan has begun since early 1990s. Pegylated interferon (Peg-IFN) plus ribavirin (PR) therapy became the “standard-of-care (SOC)” since early 2000s and until recent years the all-oral (IFN-free) direct antiviral agents (DAAs) have developed as the SOC from Western Countries. Nevertheless, the DAAs therapy is not yet completely available in Asian Countries. The role of the PR therapy may deserve to be determined in these areas.

The SOC therapy of PR has achieved SVR rates of 70%-75% for HCV genotype 1 (HCV-1) for 48 weeks and 85%-90% for HCV-2 patient for 24 weeks, respectively. The personalized therapy have well-developed with the exploration of the pre-treatment factors such as the interleukin 28B polymorphism, viral load etc. and the on-treatment viral kinetics such as clearance of HCV RNA at 4th- week (rapid virologic response; RVR) and 12th week virological response. The excellent response with more than 95% of the SVR rates have been reported in Taiwan by the concept of response-guided therapy: 24 weeks for HCV-1 with lower baseline viral loads (LVL, HCV RNA < 400,000 IU/ml) and an RVR, and to 16 weeks for HCV-2 with an RVR which could provide equal efficacy to SOC. The stopping rule of the PR therapy may also identify the poor-responders who may need more “effective” therapeutic regimen. Since the high cost of the DAAs, the improvement of the responded- guided therapy by further exploring the “better” stopping rule, adequate doses of the ribavirin keeps going for studying.

Translation of efficacy into effectiveness is important in managing the HCV infection. To improve the awareness and access of therapy is as urgent as development of high potency/safety IFN-free DAAs. In Western Countries, for HCV G1 patients, triple therapy with first-generation protease inhibitors is cost effective compared with dual therapy in some patients, and compared to no therapy in previous relapser and partial responders. To provide evidence on the clinical effectiveness and cost-effectiveness of any interferon-free combination is important. For example, the economic evaluations conducted outside of Canada demonstrated that sofosbuvir (SOF) plus simeprevir (SIM) is more cost-effective than SOF plus RBV. Ledipasvir (LDV)/SOF is associated with more favourable short- and long-term health economic outcomes compared with current therapies for HCV G1 patients across all levels of treatment experience and cirrhosis stages. For treatment-experienced patients with HCV genotype 2 or 3 infection and those with cirrhosis, sofosbuvir provides good value for money. Further studies are needed in the areas with better SVR by PR.