First Generation of Direct Acting Antivirals (DAAs) for HCV Infection

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For the past decade, the standard treatment for chronic hepatitis C infection has been pegylated-interferon plus ribavirin but with a substantial treatment failure rate. However, by the advances of scientific researches, several direct acting antiviral (DAA) had been developed and shed a new light for the patients with chronic hepatitis C infection. In 2011, the first generation of DAA (boceprevir and telaprevir) combined with pegylated-interferon plus ribavirin had been approved in USA and Europe for the treatment of patients with genotype-1 chronic hepatitis C infection. This triple therapy has really improved the treatment success rate with 30 % increment. Improvements have been most substantial in populations regarded as difficult to treat, such as individuals with cirrhosis or treatment-experienced patients. However, despite improved response rates, these first generations of DAA have incremental toxic effects, high costs, increased pill burden, and many drug interactions. Moreover, because new antiviral drugs directly inhibit hepatitis C virus, viral resistance has become an important issue, essentially precluding use of DAA monotherapy, and potentially restricting future treatment options for patients who consequently do not achieve sustained virological response. Therefore, the new triple therapy regimen with first generation of DAAs has provided a new hope but at the same time with several issues that need to pay attention on.