Succesful treatment of chronic hepatitis C virus infection with daclatasvir and asunaprevir in a transfusion dependent thalassaemia patient

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Dear Editor,

Thalassaemia is one of the most common inherited hemoglobinopathies that is characterized with defective hemoglobin synthesis and ineffective erythropoiesis. Chronic transfusion therapy which increases the risk of hepatitis C virus (HCV) infection is the main treatment for severe forms of disease. Upon routine implementation of HCV screening in blood banks, chronic Hepatitis C incidance in thalassaemia patients has decreased. Nevertheless, HCV prevalence in transfusion dependent thalassemia patients, most of whom have acquired HCV prior to screening, is 23–47%. Cirrhosis occurs in about 10–20% of chronically infected patients. Iron overload associated with chronic transfusion also contributes to the development of cirrhosis in these patients. Therefore successful treatment of hepatitis C in thalassemia patients is imperative. The classical treatment regimen of hepatitis C with peginterferon alfa and ribavirin combination does not have an optimal efficacy and tolerability in the general hepatitis C population. Furthermore ribavirin can induce hemolysis that leads to worsening of the anemia, a need for increased transfusion frequency and iron overload in thalassemia patients (1). However, chronic hepatitis C treatment has improved significantly in recent years due to novel, direct-acting antiviral agents (2,3). In the general hepatitis C population, these agents have shown high efficacy and tolerability, while for hepatitis C patients with thalassaemia, there is only a single case report on direct-acting antivirals, where the sofosbuvir-simeprevir combination was used (4). Herein, we reported a young beta-thalassaemia major patient with chronic hepatitis c infection who was treated with daclatasvir and asunaprevir, another direct-acting antiviral combination, successfully.

A 27 year-old male patient with beta thalassaemia major that had been receiving red blood cell transfusion monthly was admitted to our clinic. He was diagnosed with chronic hepatitis C virus genotype 1b infection fifteen years prior and had treatment failure history with peginterferon alfa/ribavirin combination for two times. The laboratory results at the time of presentation showed: hemoglobin:8,8 (12-16 g/dl), white blood cell:29600 (3,5-10,5x$10^3/\mu$l), platelet: 553000 (130-400x$10^3/\mu$l), ALT: 61 (0-30 U/L), AST: 64 (0-30U/L), albumin:3,9 (3,5-4,5mg/dL) INR:1,1 (0,8-1.2) and HCV-RNA: 567000 IU/mL. For treatment, 60 mg/day daclatasvir and 200 mg/day asunaprevir were prescribed for 6 months. HCV RNA became negative at the end of the 4th week. No therapy related adverse events were observed in the patient during and following treatment. At the 12-month follow up visit after the cessation of treatment, the patient had sustained virologic response and normal liver enzymes levels.

Daclatasvir and asunaprevir (DAC-ASUN) are the two direct-acting antiviral agents that affect the nonstructural proteins of the hepatitis C virus, NS5A and NS3 respectively, and they inhibit viral replication. The combination of DAC-ASUN has a high efficacy in genotype 1b hepatitis C patients and its sustained virologic response rates are more than %80 overall. This combination is generally safe and well tolerated and adverse effects are seen in a small proportion of patients. The most common adverse effects are nasopharyngitis, increased ALT and AST, headache, diarrhea, and pyrexia. DAC-ASUN related anemia has also been reported in 0-3% of the patients, while the mechanism of anemia has not been elucidated yet (2,3). Anemia can be dangerous and can increase the complication risk in thalassaemia patients. However, currently there are no reports on the use of DAC-ASUN in thalassaemia patients. Our report describes the first such case in a thalassemia major patient with genotype 1b hepatitis C and there were no adverse events during the treatment including hemolysis and anemia. Limited experience with direct-acting antiviral agents, such as DAC-ASUN, suggest that they can be safe and effective in thalassemia patients. However, further reports are needed to confirm the efficacy and safety of these agents in thalassemia patients.

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