

Successful treatment of chronic hepatitis C virus infection with 22-day ledipasvir plus sofosbuvir therapy in a patient with renal transplantation

Hayretdin Köklü , Tuğrul Pürnak, Nomingerel Tseveldorj, Halis Şimşek 

Division of Gastroenterology, Department of Internal Medicine, Hacettepe University School of Medicine, Ankara, Turkey

Cite this article as: Köklü H, Pürnak T, Tseveldorj N, Şimşek H. Successful treatment of chronic hepatitis C virus infection with 22-day ledipasvir plus sofosbuvir therapy in a patient with renal transplantation. *Turk J Gastroenterol* 2018; DOI: 10.5152/tjg.2018.18238.

Dear Editor,

A 59-year-old male who was a kidney transplant recipient with chronic hepatitis C virus (HCV) infection was admitted to our clinic. His medical history included hypertension, diabetes mellitus, coronary heart disease, and benign prostate hyperplasia, and the kidney transplantation was performed 8 years previously. He had also been diagnosed with genotype 1b HCV infection for 10 years and had a history of treatment failure with the combination therapy of pegylated interferon and ribavirin. On admission, current medications were found to be irbesartan, hydrochlorothiazide, metoprolol, gliclazide, tamsulosin, tacrolimus, prednisolone, and mycophenolate sodium. The physical examination was unremarkable, and the laboratory test results were as follows: hemoglobin levels: 11.1 (11.7-15.5) g/dL, leukocyte count: $4.4 \times 10^9/L$ (4.1-11.2), platelet count: $87 \times 10^9/L$ (159-388), alanine-transaminase levels: 114 (0-50) U/L, aspartate-transaminase levels: 60 (0-50) U/L, creatinine levels: 2.2 (0.6-1.1) mg/dL, estimated glomerular filtration rate (eGFR): 32 mL/min (>60), albumin levels: 4.15 (3.5-5.2) g/dL, INR: 1.05 (0.8-1.2), and HCV-RNA levels: 161014 IU/mL. Ultrasonographic assessment of the hepatobiliary system was normal. Ledipasvir plus sofosbuvir once-daily dose of 90/400 mg was started for the treatment of HCV. The medications associated with renal transplantation and hypertension were also modified by the nephrologist due to high blood pressure, cytopenia, and low tacrolimus levels. However, the patient's creatinine levels increased to 3.27 mg/dL and eGFR values decreased to 20 mL/min during follow-up (deemed unrelated to the antiviral therapy). The ledipasvir/sofosbuvir therapy was terminated on the 22nd day of treatment. The HCV viral load was negative at the end of treatment on the 22nd day. No further treat-

ment for HCV was initiated for the patient, and a sustained virological response in the 12th (SVR 12) and 24th (SVR 24) weeks was obtained for HCV.

Ledipasvir (inhibitor of NS5A) and sofosbuvir (inhibitor of NS5B polymerase) are two second-generation, direct-acting antiviral agents (DAAs) used for the treatment of chronic HCV infections. The combination of ledipasvir with sofosbuvir is one of the recommended treatment regimes for genotype 1 and genotype 4 infections in patients with kidney transplantation. The regimen is highly effective, and sustained virological response rates occur in more than 90% of cases in all patient groups. The regimen also has an acceptable safety profile, and early treatment cessation is needed in only a small proportion of patients. The recommended duration of ledipasvir/sofosbuvir treatment in patients with kidney transplantation is 12 weeks (1,2). However, we report the case of kidney transplant recipient with chronic HCV infection who was successfully treated with only a 22-day course of ledipasvir/sofosbuvir therapy. SVR with short-term antiviral therapy in patients with kidney transplantation is not a rare condition, and Gentil et al. (3) have reported that 73% of patients had SVR in the fourth week of DAAs treatment. However, eradication of HCV with short-term antiviral therapy in patients with kidney transplantation has been rarely described in the literature. Apart from this case, one case was reported by Colombo et al. (1), one case by Calvanese et al. (4), and two cases by Fernandez et al. (5). In all these cases, HCV treatment was discontinued due to the adverse events that were not related to DAA therapy, as in our case, and SVR 12 was achieved with 4 weeks of antiviral therapy (1,4,5). These cases and the current case provide crucial clinical considerations; all patients with chronic HCV infection do

Corresponding Author: Hayretdin Köklü; hayretdink@gmail.com

Received: March 22, 2018 Accepted: August 6, 2018 Available online date: November 20, 2018

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DOI: 10.5152/tjg.2018.18238

not need 12 weeks' duration of treatment for HCV, and some of these patients can be successfully treated in a short-term treatment period. This is particularly important for renal transplantation patients. Although recent studies have indicated that the side effects of DAAs in those patients have been low, the short-course treatment for HCV is preferable because it may potentially lead to less drug-drug interaction (between DAAs and immunosuppressive agents) and fewer therapy-related adverse events or complications that can affect the graft survival (6). However, it has not yet been clarified whether the standard treatment period, as currently recommended in clinical practice, is really necessary for all patients with chronic HCV infection or in which patients, short-term HCV treatment could be successful? There is a need for further studies on this subject, and our case can be considered a useful contribution to the literature in this context.

Peer-review: Externally peer-reviewed.

Author Contributions: Concept - H.K.; Design - H.K.; Supervision - T.P., H.Ş.; Resource- H.K., N.T.; Materials - H.K.; Data Collection and/or Processing - H.K., N.T.; Analysis and/or Interpretation - H.K.; Literature Search - H.K., N.T.; Writing - H.K.; Critical Reviews - T.P., H.Ş.

Conflict of Interest: The authors have no conflict of interest to declare.

Financial Disclosure: The authors declared that this study has received no financial support.

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