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Effect of Sofosbuvir-Based Hepatitis C
Virus Therapy on Kidney Function in
Patients with CKD

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Abstract

Background and objectives Hepatitis C virus infection is common in patients with CKD and leads to accelerated progression to ESRD. Sofosbuvir is a potent direct-acting antiviral therapy against hepatitis C virus; however, there are concerns about its safety in patients with CKD. The objective of our study was to determine the safety and efficacy of sofosbuvir in patients with CKD.

Design, setting, participants, & measurements We studied a retrospective observational cohort of patients with CKD defined by eGFR < 60 ml/min per 1.73 m², ≥ 30 mg albuminuria per 1 g creatinine, or ≥ 200 mg proteinuria per 1 g creatinine who received sofosbuvir-based therapy in a large health care system. Regression models were constructed to predict likelihood of sustained virologic response, detect adverse events, and examine changes in eGFR from baseline to follow-up.

Results Ninety-eight patients with CKD (42% stage 1 or 2 CKD and 58% stage 3 CKD) were included. Mean age was 62 years old, 78% were men, and 65% were white. Additionally, 49% of patients had diabetes, 38% of patients had cirrhosis, and 33% of patients had prior solid organ transplant. Overall sustained virologic response was 81% and varied by regimen used and viral genotype. Average baseline eGFR was equivalent to average on-treatment eGFR, but seven patients experienced a rise in creatinine ≥ 1.5 times baseline while taking sofosbuvir; all but one recovered. In patients with eGFR < 60 ml/min per 1.73 m² at baseline (stage 3 CKD), regression models showed that hepatitis C cure was associated with a 9.3 (95% confidence interval, 0.44 to 18) ml/min per 1.73 m² improvement in eGFR during the 6-month post-treatment follow-up period. Adverse events were common (81%), but serious adverse events (17%) and treatment discontinuations (8%) were uncommon.

Conclusions Sofosbuvir-based direct-acting antiviral therapy is safe and effective in a cohort of patients with CKD infected with hepatitis C.

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Table of Contents

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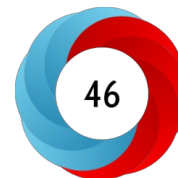
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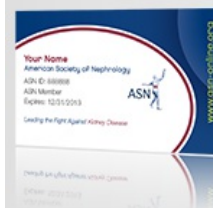
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