

Hepatitis C Virus Infection and Kidney Transplantation

A Review for Clinicians

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Hepatitis C virus (HCV) infection is frequent among kidney transplant recipients, and it is currently the major cause of chronic liver disease following kidney transplantation. The presence of HCV infection has been found to negatively affect the morbidity and mortality rates in patients on dialysis, as well; it seems that kidney transplantation is a reasonable treatment option after a careful pretransplant evaluation. Nevertheless, there are several questions about the indications of kidney transplantation, pretransplant evaluation, transplantation from HCV-infected donors, patient and graft survival rates, and kidney diseases associated with hepatitis C virus after kidney transplantation. This review deals with the most current information on pretransplant and posttransplant evaluations, complications, treatment, and prognosis of HCV-infected kidney transplant recipients.

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INTRODUCTION

Kidney transplantation is the treatment of choice for end-stage renal disease (ESRD); however, complications thereafter are a major source of concern, one of which is liver disease, a frequent complication that represents as one of the leading causes of death in long-term.¹ Chronic hepatitis, cirrhosis, and hepatocellular carcinoma are well-known liver complications of hepatitis C virus (HCV), especially after kidney transplantation.^{2,3} Previously, hepatitis B virus (HBV) was the major cause of viral hepatitis in patients with ESRD⁴; however, HCV infection is currently frequent among patients with ESRD receiving a kidney transplant.⁵ Today, HCV infection is the major cause of chronic liver disease after kidney transplantation.⁶⁻⁸

Importantly, liver dysfunction is an important cause of morbidity and mortality following kidney transplantation, and liver failure has been reported as a cause of death in 8% to 28% of long-term survivors after kidney transplantation.⁶⁻¹¹ There has been a noticeable decrease in HCV infection among patients on hemodialysis; after the introduction

of regular screening for HCV and the use of erythropoietin, its incidence varied from 5% to 25% in the United States, and it was about 6.8% in Europe.^{4,12} However, nosocomial spread of HCV within dialysis units continues to occur and dialysis is the main source of acquired infection, and most kidney transplant recipients would have acquired HCV infection prior to transplantation.¹³⁻¹⁶

The prevalence of anti-HCV antibodies, however, among kidney recipients living in different countries varies between 2.6% and 66%, and it is also different between centers, countries, and geographic areas.¹⁷⁻¹⁹ Hepatitis C virus infection in immunocompetent hosts causes a slowly progressive liver dysfunction and has an indolent course.²⁰ For example, full impact of posttransfusion HCV infection may not be observable until the second decade after the infection.¹¹ However, data on natural history of HCV infection in kidney transplant recipients are conflicting.²⁰ Furthermore, the viral load increases during immunosuppressive therapy.¹⁴ However, little is known about the natural history of HCV infection in the setting of long-term treatment