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COMMENTARY

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HCV in the haemodialysis population: Treat now or later?

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Hepatitis C virus (HCV) infection remains commoner in patients with chronic kidney disease (CKD) than the population at large.[1] In the haemodialysis (HD) population, HCV infection in part reflects acquisition of infection within dialysis units where its transmission can be effectively prevented by meticulous attention to body fluid precautions.[2] A series of studies have confirmed that HCV transmission on HD reflects lack of adherence to these precautions.[3] In contrast to the prevention of hepatitis B transmission in this setting, dedicated dialysis machines for HCV-infected patients are not recommended.[4] The likelihood of HCV acquisition while on HD is increased in units with a higher background prevalence of HCV infection, so an infected HD patient also places others at risk.

Consequences of HCV infection for an individual patient not only include a risk of progressive liver disease but also an overall increased risk of mortality. HCV infection also has important consequences in kidney transplant recipients.[5] Graft and recipient outcomes are worse in infected patients in addition to a higher incidence of post-transplant diabetes mellitus. Although until recently treatment options for HCV in the CKD population were limited by the poor efficacy and tolerability of interferon-based therapy, the advent of direct-acting antiviral (DAA) agents has made virological cure feasible even in HD patients. Roth and colleagues[6] in the C-Surfer study established the excellent efficacy and tolerability of all oral therapy for HCV infection with genotype 1 in CKD using elbasvir and grazoprevir; importantly three quarters of the 211 study subjects were HD dependent. Gane and colleagues[7] reported on the pangenotypic regimen of glecaprevir and pibrentasvir in 104 HCV-infected patients with CKD, 82% of whom were dialysis dependent. In both of these studies, sustained virological rates were 99%. These studies thus have established that HCV therapy in the HD population is feasible and highly effective.

A remaining area of controversy is the timing of antiviral therapy in HD patients. In addition to diminishing, the likelihood of hepatic or extra-hepatic complications,[8] successful treatment of HCV in an HD patient which improves the overall survival of HD patients[9] also eliminates a potential source of infection to others. But, HCV treatment in HD patients is not endorsed as a strategy to prevent HCV transmission within HD units.[4]

However, for individual patients there may be a number of other considerations mainly related to potential renal transplantation candidacy and use of organs from HCV seropositive donors. HCV transmission can occur from HCV viremic donors to recipients. An increasing experience has attested to a lack of adverse consequences for graft or recipient when these organs are implanted into already HCV-infected patients.[10] Reese and colleagues reviewed acceptance rates of potential kidney grafts in the United States between 2005 and 2014 and identified 6546 kidneys from HCV seropositive deceased donors. Only 37% of these organs were eventually transplanted, despite the majority being of high quality as assessed by the Kidney Donor Quality Index, implying that about 4000 organs were discarded which in turn could have provided 12 000 years of graft life. Li and colleagues[11] using the OPTN/UNOS database recently demonstrated that the rate of HCV positivity in US donors had more than doubled to 6.6% by 2016 compared to 3% in 2000 reflecting in large part the opioid crisis. A similar increase in donors dying from drug overdoses has not been detected in Eurotransplant data which could facilitate organ donation and allocation in many European countries.[8] Acceptance of an organ from an HCV-positive donor under the current organ allocation system in the United States can substantially reduce individual waiting times. A recent Markov model endorsed a strategy of acceptance of kidney grafts from HCV-positive donors for HCV-infected recipients deferring antiviral therapy until after transplant.[12] In the United States, the consensus is increasingly that HCV therapy is best deferred in HD patients who are transplant candidates to allow receipt of a kidney from an HCV-positive donor.[13] Such a policy is feasible due to the efficacy and tolerability of DAA after renal transplantation.[14,15]

In Europe, the World Health Organization HCV elimination plan[16] for 2030 appears to be achievable based on micro-elimination initiatives, including in the HD setting. To reduce the individual and community consequences of HCV chronic infection in HD units (ie, increased morbidity and the risk of HCV transmission, respectively), DAA treatment should be given to HCV-infected HD patients.[4] In addition, ongoing antiviral therapy should not limit access to kidney transplantation, and prior HCV cure (just like absence of previous HCV infection) will not contraindicate the use of HCV RNA-positive allografts. Kidney transplantation remains the best treatment of CKD: at the time of the DAA therapeutic revolution, HCV micro-elimination in HD units and expanding availability of allografts with HCV RNA positivity offers the opportunity to cure HCV as well as increasing the number of transplanted patients.

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest regarding the publication of this article

AUTHOR CONTRIBUTIONS

Dr Martin has served as a consultant for Abbvie, Merck and Gilead. Professor Jadoul has been a speaker for Abbvie and Merck, a consultant for Merck. In addition, he has received an unrestricted educational grant from Merck. Prof. Pol received consulting and lecturing fees from Bristol-Myers Squibb, Janssen, Gilead, Roche, Boehringer Ingelheim, MSD and Abbvie, and grants from Bristol-Myers Squibb, Gilead and MSD.

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