

Letter to the Editor**PREVENTION OF HEPATITIS C AMONG PATIENTS ON HEMODIALYSIS AT THE CLINICAL CENTER OF MONTENEGRO****Damir Peličić^{1,2}, Elvir Mučić¹**¹Clinic of Nephrology, Clinical Center of Montenegro, Podgorica, Montenegro²Faculty of Medicine, University of Montenegro, Podgorica, Montenegro**Received:** March 20, 2026; **Revised:** April 3, 2026; **Accepted:** April 8, 2026**Published:** April 10, 2026**DOI:**10.5937/annnur4-65924**Keywords:** hepatitis C, renal dialysis, prevalence, prevention, hospitals**Corresponding Author:** Damir Peličić; Email: damir.pelicic@t-com.me

Dear Editor,

Hepatitis C virus (HCV) infection remains a significant global public health concern. It is estimated that more than 185 million individuals worldwide have been infected with HCV¹⁻⁴. Currently, approximately 50 million people are living with chronic HCV infection, with around 1.0 million new infections occurring annually^{5, 6}.

Evidence indicates that key risk factors for HCV infection are associated with healthcare exposure, including blood transfusions, invasive procedures, injections, and hemodialysis (HD)⁷. Furthermore, a well-established association exists between HCV infection and chronic renal failure. Patients who are HCV-positive and undergoing HD exhibit higher mortality rates compared to HCV-negative dialysis patients, attributable not only to liver-related complications but also to an increased risk of cardiovascular disease^{7, 8}.

The prevalence of HCV among patients undergoing HD remains considerable. Recent meta-analyses have primarily focused on

assessing the safety, tolerability, and efficacy of antiviral therapies in this population⁹⁻¹¹.

Ratiu et al. reported that HCV infection in HD patients often follows a subclinical course. Moreover, long-term treatment with direct-acting antivirals (DAAs), extending beyond five years, is associated with stabilization of liver function in the absence of major complications. However, despite these therapeutic advances, the incidence of malignancy remains elevated in HCV-positive HD patients⁸.

Despite the availability of effective antiviral therapies, patients with HCV infection undergoing HD as a form of renal replacement therapy are infrequently treated. Expanding access to antiviral treatment could improve survival outcomes and enhance the prognosis of patients awaiting kidney transplantation¹².

Patients on HD are recognized as a high-risk group for HCV infection. The introduction of erythropoietin for the management of anemia has

significantly reduced the need for blood transfusions and, consequently, transfusion-related HCV transmission. In addition, the implementation of strict infection control measures, including adherence to standard hygiene protocols and the use of isolation strategies, has led to a marked decline in both the incidence and prevalence of HCV in most Western HD units. Although current incidence rates are low, the risk of sporadic nosocomial transmission persists. Therefore, the isolation of HCV-positive patients in dedicated dialysis rooms, along with strict adherence to infection prevention protocols, remains essential for minimizing transmission¹³.

Data from the dialysis center at the Clinical Center of Montenegro indicate that, as of December 2025, only one out of eighty patients enrolled in the chronic HD program tested positive for HCV infection. The successful prevention of HCV transmission in this setting can be attributed to comprehensive infection control strategies, including early detection, strict patient isolation in dedicated rooms with separate equipment, and rigorous adherence to hygiene standards. These findings underscore the importance of integrated approaches encompassing prevention, timely diagnosis, effective treatment, and high-quality patient care in achieving optimal clinical outcomes at the Clinic of Nephrology, Clinical Center of Montenegro.

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

Note: Artificial intelligence was not used as a tool in this study.

Funding: None.

References

1. Winston A, Wurcel AG, Gordon C, Goyal N. Viral hepatitis in patients on hemodialysis. *Semin Dial* 2020 May; 33(3):254-262. doi: 10.1111/sdi.12882.
2. Ali NK, Mohamed RR, Saleh BE, Alkady MM, Farag ES. Occult hepatitis C virus infection among haemodialysis patients. *Arab J Gastroenterol* 2018 Sep; 19(3):101-105. doi: 10.1016/j.ajg.2018.09.001.
3. Gower E, Estes C, Blach S, Razavi-Shearer K, Razavi H. Global epidemiology and genotype distribution of the hepatitis C virus infection. *J Hepatol* 2014 Nov; 61(1 Suppl):S45-57. doi: 10.1016/j.jhep.2014.07.027.
4. Nelson PK, Mathers BM, Cowie B. et al. Global epidemiology of hepatitis B and hepatitis C in people who inject drugs: results of systematic reviews. *Lancet*. 2011 Aug 13; 378(9791):571-83. doi: 10.1016/S0140-6736(11)61097-0. Epub 2011 Jul 27.
5. Bello AK, Levin A, Tonelli M, et al. Assessment of Global Kidney Health Care Status. *JAMA* 2017; 317:1864. <https://doi.org/10.1001/jama.2017.4046>.
6. Pecoits-Filho R, Okpechi IG, Donner JA, et al. Capturing and monitoring global differences in untreated and treated end stage kidney disease, kidney replacement therapy modality, and outcomes. *Kidney International Supplements* 2020;10:e3-e9. <https://doi.org/10.1016/j.kisu.2019.11.001>
7. Lens S, Rodriguez-Tajes S, Llovet LP, Maduell F, Londoño MC. Treating Hepatitis C in Patients with Renal Failure. *Dig Dis*. 2017;35(4):339-346. doi: 10.1159/000456585.
8. Ratiu IA, Mihaescu A, Olariu N, et al. Hepatitis C Virus Infection in Hemodialysis Patients in the Era of Direct-Acting Antiviral Treatment: Observational Study and Narrative Review. *Medicina (Kaunas)*. 2024 Dec 21;60(12):2093. doi: 10.3390/medicina60122093.

9. Gordon CE, Uhlig K, Lau J, Schmid CH, Levey AS, Wong JB. Interferon treatment in hemodialysis patients with chronic hepatitis C virus infection: a systematic review of the literature and meta-analysis of treatment efficacy and harms. *Am J Kidney Dis.* 2008 Feb;51(2):263-77. doi: 10.1053/j.ajkd.2007.11.003.
10. Alavian SM, Tabatabaei SV. Meta-analysis of factors associated with sustained viral response in patients on hemodialysis treated with standard or pegylated interferon for hepatitis C infection. *Iran J Kidney Dis.* 2010 July;4(3):181-94. PMID: 20622305.
11. Fabrizi F, Dixit V, Messa P, Martin P. Antiviral therapy (pegylated interferon and ribavirin) of hepatitis C in dialysis patients: meta-analysis of clinical studies. *J Viral Hepat.* 2014 Oct; 21(10):681-9. doi: 10.1111/jvh.12276.
12. Goodkin DA, Bieber B, Gillespie B, Robinson BM, Jadoul M. Hepatitis C infection is very rarely treated among hemodialysis patients. *Am J Nephrol.* 2013;38(5):405-12. doi: 10.1159/000355615. Epub 2013 Oct 29.
13. Jadoul M, Barril G. Hepatitis C in hemodialysis: epidemiology and prevention of hepatitis C virus transmission. *Contrib Nephrol.* 2012;176:35-41. doi: 10.1159/000333761.