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Sustainability in Nephrology: Addressing the Environmental Impact of Hemodialysis

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To the Editor of the Turkish Journal of Nephrology,

In my role as a member of the Sustainable Nephrology Task Force of the European Renal Association, I read the recent review of Hur et al with great interest and concern. The significant contribution of the healthcare sector to global greenhouse gas emissions underlines the urgent need for sustainable healthcare practices, especially in high-impact fields such as nephrology.[1]

The environmental footprint of hemodialysis (HD)—a life-sustaining treatment for millions yet a substantial contributor to waste and emissions—is particularly noteworthy. With its inherent resource intensity, the anticipated rise in global dialysis demand presents a daunting challenge. With the growing number of patients relying on dialysis—estimated to reach around 5 million by 2025—the environmental implications of HD become even more acute.

The data presented on Turkiye serve as a stark example of the challenges ahead. With nearly 15.7% of its population diagnosed with chronic kidney disease, the water usage and waste production associated with HD treatment is considerable. Over a million cubic meters of pure water is required annually for HD sessions, with twice that amount ending up as wastewater—a significant economic and environmental burden.

The efforts to create a green nephrology toolkit and assess knowledge, attitudes, and practices globally are commendable. They represent necessary steps toward understanding the current landscape and providing nephrologists with the resources needed to effect change. This is critical, as environmental awareness into clinical practice.[2]

The review's delineation of the main points, particularly strategies like "Reduce, Reuse, Recycle, and Repair," offers a road map for mitigation. The suggestions encompass a broad spectrum, from promoting recycling in HD units to endorsing efficient systems like central dialysate. Additionally, the potential of newer dialysis techniques, such as online dialysate generation and sorbent dialysate regeneration, offers hope for a more sustainable future.[3]

However, while the presented strategies are commendable, adopting a collaborative approach involving medical professionals, manufacturers, policymakers, and communities is essential. Shared responsibility and collective action are crucial to drive meaningful change.

The vulnerability of kidney patients to the effects of climate change adds a layer of responsibility to our healthcare delivery models. The potential increase in acute kidney injury events due to rising global temperatures cannot be ignored, and the nephrology community

must advocate for and lead in implementing preemptive strategies to mitigate these effects.[4]

The review delivers a powerful message about collaborative efforts in the nephrology sector to adopt sustainable practices due to the significant environmental impact of HD. It calls for collective action among healthcare providers, industry, policymakers, and communities to implement strategies that can mitigate the ecological footprint of dialysis treatment and address the increasing vulnerability of kidney patients to climate change.

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AUTHOR'S RESPONSE

Ender Hür

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Firstly, I have to thank the author for this elegant letter, and I'm glad to review it as a 2nd president of "Environmental Green Dialysis Association (Çevreci Yeşil Diyaliz Derneği)" "The review's delineation of the main points, particularly strategies like "Reduce, Reuse, Recycle and Repair", offers a road map for mitigation. The suggestions encompass a broad spectrum, from promoting recycling in HD units to endorsing efficient systems like central dialysate." Here the author point outs the central dialysate. It is better her to give more details about central dialysate systems since in Türkiye unfortunately it is far from routine daily practice. Recently as Enviromental Green Dialysis Association, we have proposed the partnership to Turkish Ministry of Health for Funds and implemented by the United Nations Development Programme (UNDP) about construction of pilot central dialysate system in Manisa and the health authorities not responded yet in time and we could not submit the project in approval period. Our association just published and pointed out that wasted reverse osmosis rejected water must be saved since it is clean enough to be used in anywhere. "Akbaş Yeşil S, Asana İ, Adıbelli Z, Kurt H, Duman S. Hemodiyaliz Dünyanın suyunu tüketiyor: Ters Osmozdan Atılan Suyun Analizi ve Kullanılabilir Olması. Turk Nefroloji, Diyaliz ve Transplantasyon Hemsireleri Dernegi. 2023;18(3):134-43. doi:10.47565/ndthdt.2023.76"