

Twice-Weekly Hemodialysis Is an Option for Many Patients in Times of Dialysis Unit Stress

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JASN 31: ●●●-●●●, 2020. doi: <https://doi.org/10.1681/ASN.2020030361>

Hemodialysis care may come under great stress with the coronavirus disease 2019 pandemic. A change from the standard thrice-weekly treatments to twice weekly could relieve some of this stress. Benefits would include:

1. Less exposure to potential coronavirus disease 2019 infection for the patients and staff;
2. Reduction in dialysis staff work, including reduced time for cleaning of machines between treatments and at the end of the day;
3. Greater spacing of patients;
4. Reduced transportation needs; and
5. Conservation of personal protective equipment.

Considerable data suggest that two hemodialysis treatments per week are not much inferior to three treatments per week, and a change made in the face of the pandemic would likely be relatively short term. Thrice-weekly treatment was adopted as standard by the University of Washington program in the 1960s because patients developed neuropathy while receiving long nocturnal treatment dialysis twice weekly.¹ It remains standard in the United States, and the 2015 Update of the Kidney Disease Outcomes Quality Initiative Clinical Practice Guideline left in place the 2006 recommendation that twice-weekly treatment be restricted to patients having

a residual urea clearance of >2 ml/min.² There has been, however, no controlled comparison of twice-weekly and thrice-weekly treatment, and many patients now survive on twice-weekly treatment where resources are limited.³ United States Renal Data System (USRDS) data from the 1990s did not show higher mortality with twice-weekly treatment even among patients on prevalent hemodialysis who had been maintained on dialysis for an average of >3 years.⁴ More recent data from a large United States provider did show higher mortality among incident patients with residual urea clearance <3 ml/min.⁵ Dialysis Outcomes and Practice Patterns Study (DOPPS) data from China, however, revealed neither higher mortality nor lesser quality of life with twice-weekly treatment, even in patients who had a urine output of <200 ml/d and had been on dialysis for an average of >3 years.⁶ Of note, in the USRDS and DOPPS studies, the per treatment Kt/V_{urea} was not much higher in patients dialyzed twice weekly than thrice weekly, and therefore, the total weekly dose was markedly lower in those dialyzed twice weekly. Results of all of these observational results are subject to confounding, with twice-weekly treatment in some cases likely prescribed for patients with significant residual function and good dietary compliance and in other cases prescribed for patients with poor health and limited intake. Collectively, however, these data suggest that twice-weekly treatment is less dangerous than commonly supposed.

A shift of patients to less frequent hemodialysis schedules will not relieve all of the pressures that dialysis units face during this pandemic, but it should be considered as one option and would likely provide adequate control of uremia, at least over a matter of weeks.

DISCLOSURES

None.

FUNDING

None.

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Published online ahead of print. Publication date available at www.jasn.org.

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See related editorial, “Counterpoint: Twice-Weekly Hemodialysis Should Be an Approach of Last Resort Even in Times of Dialysis Unit Stress,” on pages XXX–XXX.