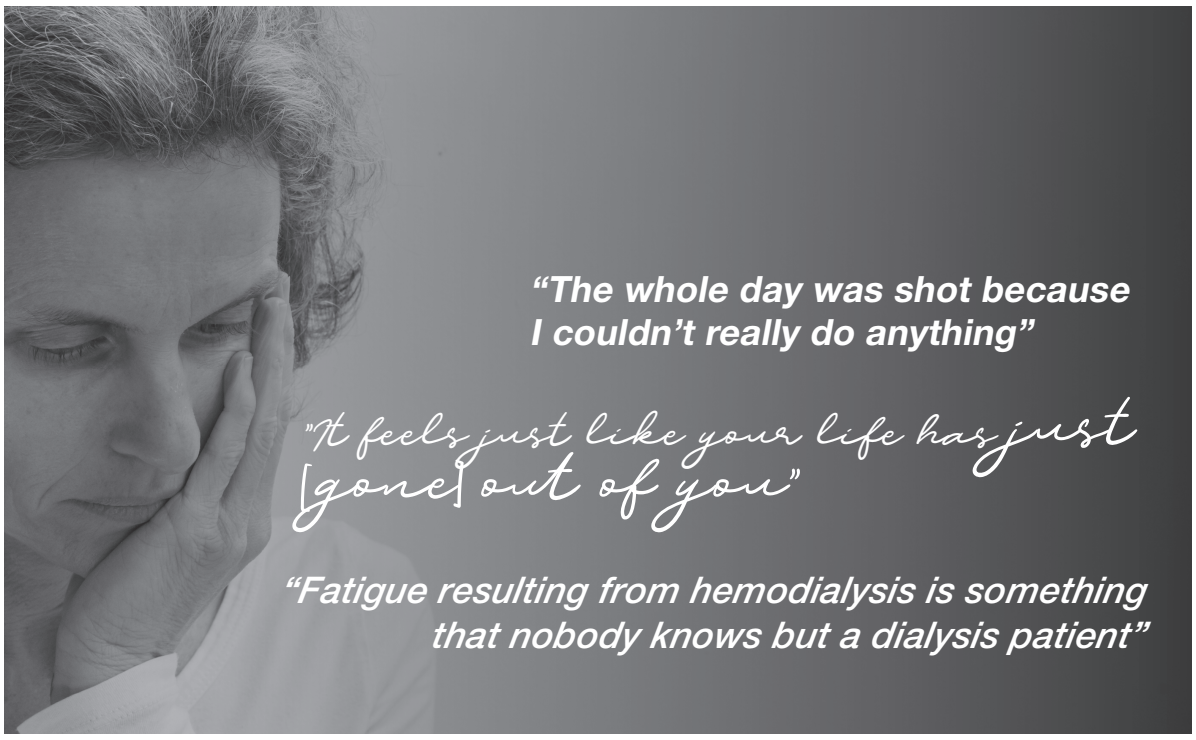
Postdialysis Fatigue

By Vishal Duggal, Wael Hussein, and Graham Abra



A 65-year-old woman who has undergone hemodialysis (HD) three times per week for 10 years notes that she "has no energy" after her treatments. After dialysis, she goes home, sleeps for 2 hours, and still feels tired for several more hours. Sometimes she does not feel "back to [her] normal self" until the next day. She asks her provider why she feels so fatigued and what can be done to help.

Postdialysis fatigue

Fatigue is commonly reported by HD patients. Although there is no widely accepted definition of postdialysis fatigue, patients often express feeling exhausted or drained soon after dialysis. Patients lose their ability to "experience life" as a result of both the physical and emotional impact of HD. Postdialysis fatigue is associated with hard outcomes such as hospitalization and mortality (1). As such, fatigue has been identified by clinicians and patients as a research priority (2).

The time required by patients to recuperate from dialysis is often quantified in minutes or hours and is typically referred to as dialysis recovery time (3). The patients most likely to experience longer recovery times include those with advanced age, greater number of years receiving dialysis, and multiple comorbidities (4). The dialysis routine, which involves travel, waiting, and changes to rest times and mealtimes, contributes to recovery time. The buildup of fluid and uremic waste before dialysis and the rapid shifts during dialysis, particularly after longer interdialytic intervals with traditional three-times-per-week in-center dialysis, is also associated with fatigue. High ultrafiltration rates, particularly when associated with hypotension, are also associated with postdialysis fatigue (5).

A significant proportion of HD patients experience fatigue after dialysis, often requiring several hours of restful inactivity or sleep before recovery (6), which they describe as unique to dialysis days.

How to measure fatigue

One of the difficulties facing researchers in this area is the lack of a suitable measurement tool. Available tools include the four-item Vitality section of the 36-item Short Form Health Survey, among several others (8). The length of surveys is prohibitive for their use, particularly in patients with severe fatigue. In addition, most if not all of these tools have limited or no validation in the HD population. To complicate things further, fatigue itself is difficult to define, with several dimensions to capture. For example, a measurement tool needs to differentiate between a nagging, ongoing, and prolonged fatigue compared with a short, yet severe, drop in energy. A current initiative is being undertaken by the Standardized Outcomes in Nephrology–Hemodialysis group to develop a tool that addresses these issues (8).

The minutes-to-recovery question (dialysis recovery time)

Answers to the question "How long does it take you to recover from a dialysis session?" can be used to obtain information about fatigue (3). Shorter recovery times reported with this question correlate with higher quality of life survey scores. Sixty-eight percent of patients report more than 2 hours of recovery time, whereas 27% of patients report more than 6 hours (4). However, the recovery time question also has limitations (4, 5). For example, this question does not capture the severity of symptoms, nor does it differentiate between recovery from fatigue and recovery from other common complaints such as headaches, cramps, and back pain. The open-ended nature of the question allows for a wide range of interpretation, with patients' answers referring to the last treatment or an average experience over different periods of time.

How to manage postdialysis fatigue

Management strategies must be individualized. Various approaches have been suggested:

- Physical factors: Optimal treatment of comorbid conditions such as heart failure, malnutrition, and anemia.
- Adjustments to the dialysis prescription:
  - Consider whether inadequate dialysis is contributing to fatigue.
  - Measures to address intradialytic hypotension: One study observed shorter recovery times with lower ultrafiltration rates (5), but this was not the case in other studies (4). No interventional studies have been conducted to evaluate this discrepancy.
  - Consider longer or more frequent dialysis: The Frequent Hemodialysis Network trials have shown benefits from more frequent dialysis. The time taken to recover from dialysis decreased significantly when patients on three-times-per-week dialysis were changed to frequent daily or frequent nocturnal dialysis (9).
- Social support: Anxiety and depression can contribute to fatigue (6, 10).
- Exercise: A trial of low-intensity core strengthening, range of motion, and stretching/flexibility exercises for 30 minutes per week during dialysis found a decrease in postdialysis recovery time (11).

The most important step in treating postdialysis fatigue is to recognize and validate it. Successful management should be interdisciplinary, involving not only nephrologists and dialysis unit staff but also patients and family. Although the causes of postdialysis fatigue may be multifactorial, there are often modifiable factors at play, such as excessive ultrafiltration, depression, and physical deconditioning. Applied pragmatic clinical research to address this issue is urgently needed. ■

References

1. Bossola M, et al. Fatigue is associated with increased risk of mortality in patients on chronic hemodialysis. *Nephron* 2015; 130:113–118.
2. Flythe JE, et al. Symptom prioritization among adults receiving in-center hemodialysis: A mixed methods study. *Clin J Am Soc Nephrol* Mar 20 2018. doi: 10.2215/CJN.10850917. [Epub ahead of print]
3. Lindsay RM, et al. Minutes to recovery after a hemodialysis session: A simple health-related quality of life question that is reliable, valid, and sensitive to change. *Clin J Am Soc Nephrol* 2006; 1:952–959.
4. Rayner HC, et al. Recovery time, quality of life, and mortality in hemodialysis patients: The Dialysis Outcomes and Practice Patterns Study (DOPPS). *Am J Kidney Dis* 2014; 64:86–94.
5. Hussein WF, et al. Higher ultrafiltration rate is associated with longer dialysis recovery time in patients undergoing conventional hemodialysis. *Am J Nephrol* 2017; 46:3–10.
6. Sklar A, et al. Postdialysis fatigue. *Am J Kidney Dis* 1996; 28:732–736.
7. Horigan AE, et al. The experience and self-management of fatigue in patients on hemodialysis. *Nephrol Nurs J* 2013; 40:113–122.
8. Ju A, et al. Establishing a core outcome measure for fatigue in patients on hemodialysis: A Standardized Outcomes in Nephrology-Hemodialysis (SONG-HD) consensus workshop report. *Am J Kidney Dis* Mar 15, 2018. doi:10.1053/j.ajkd.2017.12.018 [Epub ahead of print]
9. Garg AX, et al. Patients receiving frequent hemodialysis have better health-related quality of life compared to patients receiving conventional hemodialysis. *Kidney Int* 2017; 91:746–754.
10. McCann K, Boore JR. Fatigue in persons with renal failure who require maintenance haemodialysis. *J Adv Nurs* 2000; 32:1132–1142.
11. Kramer C, Whalen J, Higgins D. Intradialytic exercise results in improved quality of life and post dialysis recovery time. *Adv Chronic Kidney Dis* 2014; 21:249.

Vishal Duggal, MD, Wael Hussein, MD, and Graham Abra, MD, are affiliated with Satellite Healthcare. Duggal is also affiliated with Stanford University, and Abra is clinical assistant professor, Stanford University, as well as director, Medical Clinical Affairs, Satellite Healthcare.