



Mid-Hemodialysis Levetiracetam as Rescue Therapy in Patients Having Seizures During Hemodialysis Session

Dear Editor,

Hemodialysis (HD)-associated seizures are a frequent complication.¹ Individuals receiving HD exhibit a higher propensity for seizures than those on peritoneal dialysis.² We observed two patients aged 72 and 66 years, with type 2 diabetes mellitus, hypertension, hypothyroidism and seizure disorder, undergoing maintenance hemodialysis. Both were on a regimen of levetiracetam 500 mg twice daily. An additional dose of levetiracetam 250 mg was also administered as per the recommendation. Despite this, both experienced seizure episodes during HD, leading to multiple admissions to the intensive care unit and inadequate dialysis sessions. HD is known to lower serum levetiracetam levels, potentially resulting in subtherapeutic concentrations.³ To address this issue, we administered an additional 250 mg dose of levetiracetam to both patients one hour after initiating the HD session. This adjustment effectively prevented further seizures. It has been suggested that rapid changes in the osmotic and chemical compositions of extracellular fluid during HD may contribute to the pathogenesis of HD-associated seizures.⁴ For patients on dialyzable antiepileptic medications having a preference for HD, administering an additional dose (in this case, levetiracetam) midway through the HD session appears to be a viable strategy.

Conflicts of interest: There are no conflicts of interest.

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References

1. Mashal, Pervez S, Javaid A, Wakil H, Shah N, Khan Y. Incidence of seizures in ESRD Patients on hemodialysis. *Pakistan J Med Health Sci* 2022;16. Available from: <https://doi.org/10.53350/pjmhs22168898>
2. Glenn CM, Astley SJ, Watkins SL. Dialysis-associated seizures in children and adolescents. *Pediatr Nephrol* 1992;6:182–6.
3. Company-Albir MJ, Ruíz-Ramos J, Solana Altabella A, Marqués-Miñana MR, Vicent C, Poveda JL. Haemodialysis significantly reduces serum levetiracetam levels inducing epileptic seizures: Case report. *J Clin Pharm Ther* 2017;42:774–5.
4. Tyler HR. Neurological complications of dialysis, transplantation, and other forms of treatment in chronic uremia. *Neurology* 1965;15:1081–8.

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