

The Nerve! Readers Speak

Reader response: Clinical utility of therapeutic drug monitoring of antiepileptic drugs

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I read with interest the systematic review of Al-Roubaie et al.¹ looking at clinical utility of therapeutic drug monitoring (TDM) in the management of patients with epilepsy. I personally have found TDM of limited utility in my patients. Even in the same patient, the drug levels may vary dramatically based on the time the blood sample is drawn relative to the time of ingestion of the antiepileptic drug (AED). Because monitoring is available, there is a tendency to adjust AED dosing based on the level rather than the actual seizure control itself. In a pregnant woman with epilepsy, monitoring needs to be balanced with the dose-dependent risk of major congenital malformations associated with AEDs. Like many things in medicine, TDM has gained acceptance as the standard of care without any scientific evidence to back that claim.

1. Al-Roubaie Z, Guadagno E, Ramanakumar AV, Khan AQ, Myers KA. Clinical utility of therapeutic drug monitoring of antiepileptic drugs. *Neurol Clin Pract Epub* 2019 Sep 6.

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I appreciated Dr. Sethi's commentary on our recently published article as he raises a number of interesting points.¹ Certainly, intraindividual variability is another complicating aspect of therapeutic drug monitoring (TDM) in epilepsy care and, while outside the scope of our review, should be taken into account by all clinicians who choose to incorporate serum antiepileptic drug levels into their clinical decision-making. For my personal practice, I tend to agree that the clinical utility of serum antiepileptic drug levels is limited and that dosing adjustments are best made based on clinical response (seizure control and reported adverse effects). Although our systematic review did identify some studies showing evidence for TDM, the higher quality studies did not show convincing evidence supporting a clinical benefit. In general, we clinicians now have a wealth of diagnostic options available to us, and it is easy to forget that the patient's reported symptoms and clinical examination are almost always the most important outcome measures.

1. Al-Roubaie Z, Guadagno E, Ramanakumar AV, Khan AQ, Myers KA. Clinical utility of therapeutic drug monitoring of antiepileptic drugs. *Neurol Clin Pract Epub* 2019 Sep 6.

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