

Transdermal Phenobarbital for Feline Idiopathic Epilepsy

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In the Literature

Barnes Heller HL, Trepanier LA, Robertson M, Mei C. Prospective crossover clinical trial comparing transdermal with oral phenobarbital administration in epileptic cats. *J Feline Med Surg*. 2019;1098612X18823577.

FROM THE PAGE ...

Once recognized as an uncommon cause of seizures in cats, idiopathic epilepsy has become more commonly identified as the cause of recurrent seizures in 25% to 50% of cats, although intracranial disease, metabolic causes, infection, and toxicities should also be considered, as they are also common causes of seizures in cats.¹ Once a diagnosis of idiopathic epilepsy has been made, chronic antiepileptic therapy should be recommended if seizures occur more frequently than once every 12 to 16 weeks, cluster seizures (>1 seizure in a 24-hour period) occur, status epilepticus occurs, or seizure frequency increases.²

Phenobarbital is the recommended antiepileptic drug to treat cats with idiopathic epilepsy.³ However, oral administration may be associated with adverse effects, poor pet owner compliance, and, in some patients, administration difficulties. Transdermal administration may be easier for some owners to perform, particularly those with non-compliant cats.

In this crossover pilot study, the authors administered oral phenobarbital to cats with idiopathic epilepsy for 14 weeks, then transitioned cats to transdermal phenobarbital for an additional 14 weeks. Therapeutic drug monitoring was performed, with a target serum phenobarbital concentration of 15 to 45 µg/mL. This therapeutic range was extrapolated from data on dogs, but other authors have recommended a lower target range for cats (ie, 20-30 µg/mL).² The dose of the transdermal formulation did not correlate with serum phenobarbital concentrations, suggesting inconsistent administration or bioavailability.

Dose adjustments were more frequently needed in cats receiving transdermal phenobarbital as compared with oral phenobarbital. Six of 9 owners preferred transdermal administration, but both formulations were well-tolerated. Although it may require more dose adjustments and greater drug monitoring, transdermal phenobarbital may be an effective option in the management of epileptic cats, particularly when oral administration may be difficult.

... TO YOUR PATIENTS

Key pearls to put into practice:

- 1 Due to differences in absorption, it is recommended that transdermal phenobarbital be administered at a dose 3 times greater than the recommended dose of oral phenobarbital.
- 2 Monitoring of serum phenobarbital concentrations after 14 days of transdermal therapy is highly recommended to ensure the patient has obtained a therapeutic concentration, as serum concentration does not correlate with the transdermal phenobarbital dose.
- 3 Patients experiencing adverse effects (eg, sedation, ataxia) should have serum phenobarbital concentrations evaluated, as concentrations in these patients often exceed the therapeutic window. Dose reduction is recommended in these patients.

References

1. Hazenfratz M, Taylor SM. Recurrent seizures in cats: diagnostic approach – when is it idiopathic epilepsy? *J Feline Med Surg*. 2018;20(9):811-823.
2. Hazenfratz M, Taylor SM. Recurrent seizures in cats: treatment – which antiepileptic drugs are recommended? *J Feline Med Surg*. 2018;20(9):825-834.
3. Barnes Heller H. Feline epilepsy. *Vet Clin North Am Small Anim Pract*. 2018;48(1):31-43.