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Levetiracetam shows promise for the treatment of feline audiogenic reflex seizures

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A group of UK-based investigators from Davies Veterinary Group and the UCL School of Pharmacy, who recently engaged the veterinary world with an article defining the previously undocumented syndrome of feline audiogenic reflex seizures (FARS), have published follow-up findings about the treatment of the condition. Their paper, 'Levetiracetam in the management of feline audiogenic reflex seizures: a randomised, controlled, open label study', appears in the *Journal of Feline Medicine and Surgery*.

FARS is a problem of older cats, which typically exhibit myoclonic seizures (brief, shock-like jerks of a muscle or a group of muscles) in response to certain high-pitched sounds. Both non-pedigree and pedigree cats (in particular, Birmans) may be affected. A range of sound stimuli has been reported, including the crinkling of tin foil and a metal spoon dropping into a ceramic feeding bowl, through to firewood spitting and even texting on a phone. It was this bizarre collection of triggers that captured the imagination of media around the world, which dubbed the condition 'Tom and Jerry syndrome', and spread the story far and wide.

While avoiding the triggering sounds can reduce the incidence of seizures, this is not always practical and so this latest research potentially spells good news for owners of affected cats.

The study compared the efficacy of two antiepileptic drugs, levetiracetam (a relatively novel medication that has proven effective in studies of people with generalised epilepsies that experience myoclonic

seizures) and the much older first generation drug phenobarbital, in 57 cats diagnosed with FARS. Cats were treated with one or other drug over a 12 week period; and owners were asked to record the date, number and type of seizures, any signs of illness, side effects and changes in activity or attitude, as well as whether they thought their cat's quality of life had improved, remained the same or deteriorated since starting the medication.

All cats receiving levetiracetam showed a reduction in the number of days that they experienced myoclonic seizures by at least half. In comparison, only 3% of cats showed the same reduction when treated with phenobarbital. The majority of reported side effects, such as lethargy and inappetence, were mild to moderate in both groups and these resolved after about 2 weeks in the cats treated with levetiracetam; in the phenobarbital group, however, side effects were relatively persistent. Owners of cats treated with phenobarbital perceived no benefit from using the medication; in contrast, all of the owners of cats treated with levetiracetam commented that their cat appeared brighter and more responsive after the first couple of weeks of treatment. Moreover, five cats treated with phenobarbital were switched to levetiracetam after the study, as their owners desired improved seizure control.

Having established that levetiracetam is an effective and well-tolerated treatment for cats with hallmark myoclonic seizures, the next step is to identify whether levetiracetam will also prevent so-called generalised tonic-clonic seizures. This is another seizure type seen in cats with FARS, and is what most people think of as a 'seizure', with the cat losing consciousness and its body stiffening and jerking, often for several minutes.

Lead author on the paper, Mark Lowrie, says, 'It is great to find a medication that works so well at controlling these seizures.

Levetiracetam is not licensed in cats but it has proven to be a very safe drug. For affected cats to benefit, it is important that vets recognise the signs as this newly defined syndrome of FARS and that this medication is used in preference to other, less efficacious, anti-epileptic drugs.'

More information: M. Lowrie et al. Levetiracetam in the management of feline audiogenic reflex seizures: a randomised, controlled, open-label study, *Journal of Feline Medicine and Surgery* (2015). DOI: 10.1177/1098612X15622806