

Levetiracetam

BRAND NAMES: KEP CET, KEPPRA, KEPPRA XR, KERRON, KEVTAN, LEVITACCORD, LEVITAM

AVAILABLE in
250 mg, 500 mg, 750 mg and 1000 mg
TABLETS
500 mg AND 750 mg
EXTENDED RELEASE TABLETS
AS WELL AS ORAL SOLUTION

BACKGROUND

In the search for seizure control in pets, phenobarbital and potassium bromide are the dominant medications. Unfortunately, there are pets for whom neither drug is appropriate. Phenobarbital, for example, requires extensive metabolism in the liver, can actually cause liver damage, and is associated with numerous drug interactions. Potassium bromide has been associated with pancreatitis and cannot be used in cats because it can induce inflammatory lung disease in this species.

As advances are made in seizure control in humans, medications eventually spill down into veterinary use and levetiracetam is a good example. Levetiracetam has been very effective in human seizure control and has the added benefit of not being broken down by the body. (It is removed unchanged by the kidneys and thus does not pose a problem for patients with pre-existing liver diseases.) With the introduction of generics, levetiracetam became affordable for most pet owners.

Levetiracetam appears to work by interfering with release of neurochemicals that allow for communication between nerves. (It interferes with release of synaptic vesicle contents).

HOW THIS MEDICATION IS USED

Levetiracetam can be used alone or in combination with other seizure control medications. It is usually given with other seizure control medications to "boost" their effectiveness.

Levetiracetam is also used to allow for reduced dosing of other seizure medications in order to mitigate side effects.

An injectable form of levetiracetam is available and can be used at home to control seizures and reduce emergency clinic expenses. Traditionally this situation (unexpected seizures at home) are addressed with rectal administration of diazepam. Giving a shot under the skin might be easier to administer especially in a seizing animal. Ask your veterinarian about this form of seizure first aid.

The chief disadvantage of levetiracetam is that it must be given three times daily in most veterinary patients. The more inconvenient a drug's dosing schedule is, the easier it is to skip doses which, in this case, could mean seizing. The extended release formulation can be used twice daily but the tablets cannot be cut or even chewed without interfering with absorption into the body thus they may not be an option for smaller patients. As mentioned, there is also an injectable formulation that could be useful for stopping unexpected seizures in the home setting.

Levetiracetam can be used alone or in combination with other seizure control medications.

Levetiracetam can be used in either cats or dogs. It may be given with or without food.

If a dose is accidentally skipped, do not double up on the next dose but give the dose when it is remembered and time the next dose accordingly. Store tablets and oral suspension at room temperature away from light.

SIDE EFFECTS

There is very little potential for side effects with this medication. All seizure control medications have potential to cause drowsiness and, in fact, this is the main side effect in the dog (and it is usually temporary). In cats, temporary appetite reduction and listlessness are most common. Some cats will show drooling.

INTERACTIONS WITH OTHER DRUGS

Addition of levetiracetam may allow doses of other seizure control medications to be reduced. That said, there is some new information that over time, phenobarbital may "teach" the body to remove levetiracetam more quickly, possibly necessitating higher dosages to maintain the same blood levels. Further, the phenomenon of "tolerance" occurs with levetiracetam such that after a long time, an effective dose may simply no longer be effective as the body becomes "tolerant." In this event, it may become necessary to add or change seizure medications. The problem with tolerance is more of an issue for dogs than for cats.

Concurrent use with medications that have sedating side effects will increase the likelihood of producing significant sedation.

Methotrexate (a cancer chemotherapy drug) has more potential for toxicity when used concurrently with levetiracetam.

CONCERNS AND CAUTIONS

Patients with kidney disease will need a dose adjustment as they will be less efficient at removing the drug from their bodies and higher levels may build up.

Levetiracetam is available as both regular and extended release tablets. The extended release tablets can be used for twice daily (instead of the conventional three times daily) dosing but extended release tablets must be given intact and cannot be split or crushed. This means they are only useful for appropriately sized animals.

Tolerance can develop to levetiracetam when it is used long term which means that will not work as well. If this is felt to be occurring, a new seizure medication will likely be needed. That said, if levetiracetam is to be discontinued, it should be tapered off rather than abruptly discontinued so as to avoid withdrawal seizures.

Other seizure medications employ therapeutic monitoring whereby blood levels of the drug are periodically measured to determine if the patient is in the proper range with dosing.

Therapeutic levels have not been established for levetiracetam; however, some experts recommend checking levels after a patient's seizures have stabilized for a week or two so as to get the therapeutic range for that individual patient.

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Additional drug and general pet care information can be found on our world wide web site:

<http://www.marvistavet.com>

