ROCKY MOUNTAIN VETERINARY NEUROLOGY

Neurology/NeuroSurgery
Stephen B. Lane, DVM
Diplomate ACVIM-Specialty of Neurology
Veterinary Neurology/Neurosurgery

Levetiracetam

Levetiracetam is a pyrrolidone-derivative anticonvulsant. The exact mechanism for Levetiracetam's antiseizure activity is not well understood. Levetiracetam may selectively prevent hypersynchronization of epileptiform-burst firing and propagation of seizure activity. It does not affect normal neuronal excitability. Levetiracetam has received recent usage in pulsatile treatment of cluster seizures as rapid serum levels are attained within 3-4 hours. Levetiracetam has also gained use in animals with liver insufficiency or Phenobarbital-induced liver toxicity. The addition of Levetiracetam often allows for the reduction in Phenobarbital dosing without increasing seizure frequency. Adverse effects with Levetiracetam appear to be unusual. A dose relationship has been noted with sedation, ataxia, and occasionally vomiting and diarrhea appreciated. Excretion half-life is roughly 4 hours in the dog. The presence of food in the gut delays the rate but not the extent of drug absorption. Less than 10% of the drug is bound to plasma proteins. While not extensively metabolized, the drug's acetamide group is enzymatically hydrolyzed to the carboxylic acid metabolized and is apparently not an active anti-seizure metabolite. Roughly 2/3 of the absorbed dosage is excreted through the kidneys unmetabolized. Renal glomerular filtration and active tubular secretion are utilized. Clearance can be significantly affected by renal insufficiency. The use of Levetiracetam in pregnant and lactating animals should be discouraged.