ROCKY MOUNTAIN VETERINARY NEUROLOGY

Neurology/NeuroSurgery
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Valproic Acid (Depekene)

Valproic acid is an anticonvulsant utilized in the treatment of recurrent seizures in humans. The mechanism of action of Valproic Acid is not understood. Studies have demonstrated that Valproic Acid inhibits gamma aminobutyric acid (GABA) transferase and succinic aldehyde dehydrogenase causing increased CNS levels of GABA, a potent inhibitory neurotransmitter. Additionally, inhibition of neuronal activity by increasing potassium conductants has been suggested. Sodium Valproate is rapidly converted to Valproic Acid in the acidic environment of the stomach where it is rapidly absorbed from the GI tract. The bioavailability reported in dogs following oral administration is approximately 80%, and peak levels occur in approximately 1 hour. Food may delay absorption but does not alter the extent of it. Valproic acid is rapidly distributed and is approximately 80% plasma protein-bound in dogs. CSF levels are approximately 10% of those found in the plasma. Valproic acid is metabolized in the liver and is conjugated with glucuronide. The metabolic conjugates are excreted in the urine with only very small amounts of unchanged drug excreted in the urine. Elimination half-life in dogs is 1.5-2.8 hours. Significant increased risk for hepatic disease utilizing this agent has been encountered in dogs. Bone-marrow suppression with thrombocytopenia has been appreciated. Its use in pregnant and lactating animals is contraindicated. Side effects coupled with Valproic Acid include nausea, vomiting, anorexia, and diarrhea. Hepatotoxicity is the most serious potential adverse reaction in both human and canine species. Consideration for the use of Valproic Acid should be based upon your neurologist's recommendation and as a last resort to control recurrent seizures.