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Therapeutic Review

Pentoxifylline

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USES AND INDICATIONS

Pentoxifylline is a methylxanthine derivative that is used in human and veterinary medicine for its hemorheological effects and anti-inflammatory properties. This methylxanthine derivative functions to decrease blood viscosity by reducing plasma fibrinogen levels and promoting fibrinolytic activity.[1,2] Pentoxifylline also increases the ability of erythrocytes and leukocytes to deform, theoretically allowing for an increase in perfusion of tissues that are distal to occlusive arterial plaques.[1–3] Various studies have also shown that pentoxifylline is capable of inhibiting neutrophil adhesion and activation while decreasing levels of tumor necrosis factor alpha (TNF-α), an early inflammatory mediator.[1,4]

In human medicine, pentoxifylline is mainly used in the treatment of peripheral arterial disease (PAD) along with certain cerebrovascular diseases that lead to reduced blood flow to brain tissue. In veterinary medicine, pentoxifylline has been prescribed for similar conditions; however, the medication is thought to be effective in treating other disorders. In equine medicine, pentoxifylline has been used in the treatment protocol for laminitis as well as other inflammatory conditions (e.g., placentitis, atopic dermatitis).

PHARMACOLOGY

Pentoxifylline is commercially available as a 400 mg sustained-release tablet and is marketed for human use. However, at this time pentoxifylline is not labeled for veterinary use. Compounding pharmacies can formulate a liquid suspension, but one should be cautious when prescribing compounded products, including pentoxifylline, due to the potential of drug-related interactions with additives contained within the formulations. Alternatively, crushing the pentoxifylline tablets and suspending in water has also been administered to veterinary patients and tested in certain animal species with known efficacy.[2]

In humans, pentoxifylline is rapidly absorbed from the gastrointestinal tract and undergoes extensive enterohepatic recycling.[1,2] Metabolism is through the liver and the metabolites excreted in the urine. Dosing at 10 mg/kg orally every