

Monensin and Lasalocid Toxicity in Horses
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Introduction

The recent news of the death of several horses in central Florida from an accidental additive to equine feed has raised awareness and questions surrounding this important issue. Monensin and lasalocid are known as ionophore antibiotics. They have been commonly used in poultry feed as an antiprotozoal agent that reduces the number of coccidia parasites. Monensin and lasalocid are also routinely added to ruminant feeds to improve feed efficiency in pasture and feedlot cattle. Improved feed efficiency results in improved weight gain/body mass with the same feed intake compared to animals that are less feed efficient. For poultry and ruminants, these feed additives are common and safe to use. Horses are the most sensitive domestic animal to monensin toxicity. The lethal dose for most horses is 2-3 mg/kg (equivalent to about 1,000 mg (1 gram) for the average horse). Unfortunately, when these additives are accidentally mixed with equine feed, the results can be deadly.

Clinical Signs

Clinical signs of monensin and lasalocid toxicity are similar. Lasalocid appears to be less toxic to horses compared to monensin. Affected horses develop several clinical syndromes, which appear to be dose related. Depression and abnormal gaits (incoordination, weakness and paresis or paralysis which can lead to inability to stand) are characteristic, in conjunction with a reduced appetite. Horses that eat only a small amount of monensin (sublethal dose) containing feed may exhibit signs of poor performance, heart failure, and unthriftiness. Cardiac arrhythmias are often apparent, with high heart rates and overly prominent jugular vein distension and pulsation. Damage to the heart is often permanent in affected horses, and cardiac evaluation is recommended in horses that survive. Ingestion of a large dose at one time can result in death within a few hours of eating the contaminated feed. Most affected horses will develop signs that can last for several days to even weeks before death or euthanasia. These symptoms can include poor appetite, colic, diarrhea, intermittent sweating, and stiffness and muscle weakness that progresses to an abnormal ataxic gait. Horses will have increased heart and respiratory rates, low blood pressure, and increased urination. It is important to note that although the clinical signs of affected horses are suggestive, a definitive diagnosis of monensin or lasalocid toxicity requires feed analysis.

Diagnosis

Feed analysis or post-mortem examination is required to make a definitive diagnosis. Horses exhibiting symptoms of anorexia, muscle weakness, and heart failure should be evaluated by a veterinarian to determine if possible exposure has occurred. Changes in blood work values are not specific for this toxicity, but typically reflect dehydration and electrolyte abnormalities soon after ingestion.

Treatment

No specific antidote exists for monensin or lasalocid toxicity. Suspect feed sources should be immediately removed pending test results of feed analysis. Initial treatment typically involves supportive care with intravenous fluids and oral laxative therapy. Anti-inflammatory and pain medication may be utilized as well.

Prevention

Education is critical for prevention of this intoxication. Feed companies that make equine, poultry, and ruminant feed need to ensure that steps are taken to prevent these additives from entering equine feed.