

## **Hyperlipidemia and Hepatic Lipidosis (Fatty Liver)**

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In the last newsletter, you were able to determine if your donkey was overweight. Although the risk of hyperlipidemia and “Fatty Liver” is present for all donkeys, ponies and miniature horses, those individuals that are obese are at the greatest risk of developing the problem. Other predisposing factors are: stress, concurrent disease, parasites, late gestation or early lactation. Concurrent diseases are often such conditions such as diarrhea, endotoxemia, kidney disease and neonatal septicemia, but any problem that causes the individual to stop or reduce their food intake puts the individual at risk of hyperlipidemia.

When hyperlipidemia occurs, the clinical signs may occur acutely and include jaundice, lack of appetite, weakness, depression that may range from mild to severe, incoordination, diarrhea, mild colic, fever, ventral swelling, and recumbency. In very severe cases, sudden death may occur due to severe fatty infiltration of the liver, rupture of the liver and fatal hemorrhage. However, one must remember that the primary predisposing problem may overshadow the hyperlipidemia.

Therefore, any time a donkey, miniature horse or pony has a reduced appetite, hyperlipidemia must be considered, monitored and treated. To determine if hyperlipidemia is playing a part in the current medical problem, serum triglyceride levels need to be measured. Normal serum levels should be less than 85 mg/dl, but may be increased to up to 300 mg/dl in healthy pregnant animals. However, if these individuals become inappetent, they are at risk of developing hyperlipidemia. Once triglyceride levels exceed 500 mg/dl, the blood/serum takes on an opalescent appearance. Liver enzyme levels will be increased; while glucose, BUN and albumin will be decreased.

Treatment is aimed at early recognition of both the initiating cause and hyperlipidemia. The sooner both are recognized, the better the outcome. It is important to keep a positive energy balance in individuals at risk (donkeys, ponies, miniature horses) of developing hyperlipidemia. If they cannot be encouraged to consume adequate calories orally, they need to be hospitalized and placed on a constant infusion of IV dextrose along with close monitoring of blood glucose levels. If an individual is not eating at all, partial parenteral nutrition may be required. If the gastrointestinal tract is normal, but the individual is just not interested in eating, a stomach tube may be placed and some nutrition can be given orally. Insulin has also been used successfully to augment therapy.

However, despite aggressive treatment, the prognosis for individuals suffering from hyperlipidemia is guarded to poor. Reports in the literature, range from 60% to 100% mortality. Therefore, prevention is the best treatment. Provide adequate nutrition, but closely monitor your donkey's body condition to prevent obesity. Provide good routine health care and promptly treat any medical problems. Finally, minimize stressful conditions whenever possible. Activity goes a long way to control weight gain. Allow your donkeys to enjoy exercise as a means to control weight gain and reduce the risk developing hyperlipidemia.

*Note: The fall newsletter will discuss another complication of obesity - laminitis (founder)*