

DIARRHOEA IN HORSES AND FOALS

Although diarrhoea is common in equines of all ages the percentage of horses with diarrhoea in which an ante mortem diagnosis is made has been variably reported to be as low as 10 to 20%. In many cases the cause may be undeterminable as the inciting factors may no longer be present by the time the horse is examined or may be related to dietary or other factors. However, infectious agents and/or their associated toxins are of major pathogenic importance in equine diarrhoeas and there are several test procedures now available to improve our diagnostic rate and help select more targeted therapy and prevention strategies.

NEMATODE EGGS AND LARVAE

An adult parasite burden is greatly overestimated as a cause of weight loss (especially as owners will invariably have dewormed a thin horse!) but cyathostomiasis is a common cause of acute (and sometimes chronic) weight loss and in many cases, diarrhoea. Over-reliance on fenbendazole could lead to a significant parasite problem in horses which are reportedly 'well wormed' therefore the de-worming protocol should be critically appraised.

CLOSTRIDIAL TOXINS

Testing is available for toxins of *Clostridium difficile* (toxins A&B) and also *Clostridium perfringens* enterotoxin and beta toxin. These toxins are readily detectable in faecal samples using enzyme immunoassay tests and positive results infer either Clostridial enterocolitis or areas of severely compromised or necrotic bowel with secondary Clostridial infection (e.g. neoplasia). Clostridia are a common cause of post-antimicrobial diarrhoeas but are often also seen in the absence of prior antimicrobial treatment.

SALMONELLA

Salmonella can be a primary cause of diarrhea in horses although is not common in the UK. Intermittent shedding of Salmonellae may lead to false negative results and repeat samples are always advisable. Confirmation of Salmonella can be made by either PCR or culture and to ensure a horse is negative the convention is to collect 5 samples from different defaecations over a period of up to 5 days. A positive result in an otherwise healthy horse can be due to shedding of the bacteria and does not always confirm its involvement in the diarrhea.

BACTERIAL CULTURE

Anaerobic culture for *Clostridia* is often uninformative as *Clostridium difficile* is very difficult to culture *in vitro*. *Clostridium perfringens* is a normal gut constituent of horses and therefore identification of this bacterium does not imply aetiologic significance hence the value of ELISA tests for toxins. Similarly, many other bacteria such as *E. coli*, *Bacteroides* and *Enterococcus* are also of highly equivocal relevance when cultured. By contrast, aerobic culture of *Aeromonas*, *Campylobacter* and *Salmonella* spp. are probably relevant to diarrhoea. The gastrointestinal tract is normally very heavily populated by an extensive and diverse bacterial population creating significant difficulty and confusion when faeces are subject to culture or PCR in suspected bacterial enteritis cases. Even unequivocal enteropathogens such as *Salmonella* spp. may sometimes be shed secondary to other primary disease processes such as cyathostomiasis.

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SAND

The significance of sand in faecal samples is difficult to determine. Sand enteropathy is commonly suspected in certain parts of the country as a cause of weight loss syndromes, diarrhoea and colic. However, the presence of fairly large quantities of sand may be normal in some horses on certain pastures and the finding of sand in faecal samples only really indicates that the horse is ingesting large quantities of sand and doesn't always necessarily imply aetiological significance. To further diagnose sand as a cause of colic radiography of the abdomen should be performed.

FAECAL OCCULT BLOOD

Faecal occult blood tests can be performed in horses to investigate distal intestinal bleeding; however blood loss in the proximal intestinal tract such as stomach and duodenum is highly unlikely to be detected in faecal samples due to degradation in the colon. Claims that horse-side test kits for faecal blood and protein can differentiate gastric and colonic bleeding or even detect bleeding from any gastrointestinal source have little evidence-base and our experiences of using such kits have been very disappointing. There seems to be little, if any, relationship between test kit results and gastroscopy findings when diagnosing gastric ulcers. If a rectal examination has been performed then the test should not be run afterwards as it will always be positive.



Sand impaction in colon

