PIROPLASMOSIS

Infection with Theileria equi and/or Babesia caballi is referred to as piroplasmosis. These are protozoan parasites that reside with erythrocytes. Although donkeys may be infected, they rarely demonstrate clinical signs. Piroplasmosis is a blood-borne disease and the geographical spread of disease is primarily dependent on appropriate tick vector availability: the genera of Dermacentor, Hyalomma, Rhipicephalus and Boophilus. Both Dermacentor and Rhipicephalus ticks exist in the UK. Latrogenic transmission via contaminated needles or transfusion is also possible, as is transplacental transmission from infected mare to foal. T. equi tends to be the commoner of the two infections and infection is common in central and South America (not USA), the middle east, Asia, Africa and southern Europe. Both parasites can coexist in the same horse. Following infection horses tend to carry the intra-erythroctic parasites for years and perhaps for life. Cases are sometimes encountered in horses in the UK following importation of previously infected horses. To date, transmission between horses in the UK has not been recognised.

Clinical Signs

Infection with T. equi is generally more severe than B. caballi. Piroplasmosis is a cause of a haemolytic anaemia in any age of foal or adult horses. Disease is more common in the summer/autumn when tick activity is greater. The incubation period is usually up to 1 month. Long-standing silent and low-level infections may recrudesce following stressful events. In adult horses the main differentials are immune mediated haemolysis, penicillin-induced haemolytic anaemia and equine infectious anaemia.

The main clinical signs of T equi infection comprise:

- Pyrexia
- Lethargy, anorexia, dullness, weakness
- Tachycardia, tachypnoea
- Pale/jaundiced/petechiated membranes
- Systolic heart murmur associated with anaemia
- Anaemia/thrombocytopenia
- Inflammatory haematology/biochemistry
- (haemoglobinuria/bilirubinuria)
- (Mild colic/diarrhoea)
- (Oedema)
- Infected mares may abort or may transfer the infection transplacentally to their foals resulting in acute and fatal neonatal haemolysis mimicking neonatal isoerythrolysis.

B. caballi cases tend to show a mild clinical picture of mild lethargy, pyrexia and jaundice.

Diagnosis

Blood smears from acute clinical cases should be stained with Romanowsy stains such as Diff-Quick, Giemsa or Wrights. This may demonstrate intra-erythroctic parasites although failure to identify infection is not uncommon unless great care and time is taken. Identification of parasites in non-clinical carrier animals is unlikely. The most reliable serologic tests are the Indirect Fluorescent Antibody (IFA) assay and ELISA, the Complement Fixation test (CFT) is not very sensitive and should probably not be used. PCR may be used in both clinical cases and carriers to identify the presence of parasites.

Treatment

Supportive treatment with blood transfusion may be required in some cases. Care should be taken with use of NSAIDs in such cases due to possible combined nephrotoxic effects of dehydration and haemoglobinuria. Specific parasiticidal treatment of B caballi is generally more effective than T equi. Imidocarb dipropionate (Imizol 85 mg/mL, MSD Agvet) is the drug of choice at a dose of 2 mg/kg im, repeated after 24 hours. This will often be effective versus B caballi but higher doses and more treatments may be required in T equi cases (eg 4 to 5 mg/kg q 72h x 4 treatments), albeit carrying a very high risk of severe and potentially fatal adverse effects. Adverse effects include hepatotoxicity and nephrotoxicity and so good hydration should be established prior to treatment. Colic and diarrhoea may also occur due to cholinesterase inhibition and pretreatment with the anti-cholinergic glycopyrrolate (2.5 ug/kg iv) may help protect against this. The drug may be more toxic in donkeys.