FriarsMoor Livestock Health

Newsletter
May 2023

WHAT REDWATER FEVER IS AND HOW TO MANAGE IT

By Paul Doran MA, VetMB, MRCVS

Redwater fever is the colloquial name for bovine babesiosis, a disease of cattle. In the UK, redwater is caused by two species of tiny protozoan parasite: Babesia Divergens and Babesia Major. B Divergens is by far the more common of the two and is also more prone to causing severe disease.

Transmission

In the UK, Babesia is transmitted by the hard tick, Ixodes ricinus. Once injected into the bloodstream by the tick, it invades red blood cells and begins dividing, eventually rupturing the cells. Clinical signs begin about two weeks after infection.

Ticks can also pass Babesia transovarially (from adult to egg to larva). This has implications for control, as the disease can be maintained between seasons, even if it is removed from host mammals by treatment or avoiding grazing risk areas. It is thought that Babesia can survive within the tick population for up to four years without any requirement for periods in the cow.

Historically, deer were not thought to be a significant reservoir of infection because studies relying on blood smear examination failed to detect the parasite in them. However, a more recent PCR-based study, conducted on a farm where the disease is present, showed 11% of Red Deer on the farmland and surrounding areas were infected with B Divergens, suggesting their significance may have been underestimated. Disease in the UK is seen mainly in south west England, with seasonal peaks in the spring and autumn.

Clinical Signs

The most recognisable clinical sign is red urine. The colour comes from haemoglobin produced by the rupture of red blood cells, hence the name redwater.

Other clinical signs include high temperature (often 40C or more), anorexia, depression, weakness, high heart rate and 'pipe stem diarrhoea'. These progress to severe dehydration, recumbency and sometimes death.

Diagnosis is based on history, clinical signs, confirmation of anaemia and examination of stained blood smears. PCR testing is available and is more sensitive than blood smear examination but is considerably more expensive and not suitable for rapid cow-side diagnosis.

Milder cases of redwater can recover without treatment. It has been shown that clinical signs do not occur in every incidence of adult infection, so it is likely that a significant proportion of infections may pass unnoticed.

Factors thought to affect the outcome of an infection include the age of the animal, number of infecting ticks, virulence of the B Divergens strain, any factor that may cause immunosuppression, and co-infection of cattle with other tick-related ailments such as tick-borne fever or anaplasmosis.

Treatment

The mainstay of treatment for redwater is administration of Imidocarb Dipropionate. Given the clinical signs, anti-inflammatories are also advised. Blood transfusion is often necessary in severely anaemic cattle. A commonly accepted rule of thumb is that animals with a packed cell volume (PCV) of less than 15% are likely to benefit from transfusion and those with a PCV of 10 or less are highly unlikely to survive without a transfusion.

Immunity

Cattle have an inverse age resistance to babesiosis, which means youngstock are highly resistant to the disease, whereas adults with no previous exposure to infection are not. Therefore, young animals exposed to the disease can acquire immunity without showing any clinical signs and will maintain this immunity owing to repeated tick challenges.

Cattle in endemic areas will rarely show clinical signs, but non-immune adult cattle brought into an endemic area, or present in an area where tick migration has occurred, may be susceptible. The age at which susceptibility to disease from Babesia infection increases is unclear. One review suggested calves up to 9 months old were resistant to clinical disease, while another implied a less complete degree of resistance may prevail up to 2.5 years of age.

Prevention

Imidocarb can be used at a higher dose rate for prevention of clinical disease in naïve animals moving to a high-risk area. This is thought to provide protection for 3–6 weeks while still allowing natural immunity to occur. Several vaccines for Babesiosis exist, though none is licensed in the UK. Apparently, all live vaccines have significant drawbacks or limitations.

A recombinant antigenic vaccine produced by the University of Montpellier has been imported by a UK veterinary practice on a made to order basis in recent years and used under a special treatment certificate (STC). This vaccine has had some clinical success. Although symptoms of redwater can be seen in vaccinated animals, they are generally reduced in severity and the vaccine provides longer protection than the preventative dose of Imidocarb. However, the vaccine is less effective in situations where there is overwhelming challenge and/or high risk of co-infection with other tick borne diseases and in these scenarios it can still be advisable to use Imidocarb in addition to the vaccine.

Exposing youngstock to ticks should ensure natural immunity is acquired but achieving this might not be practical in all situations. In many cases, Babesia seems to affect particular fields, rather than a whole farm.

While several antibody tests for demonstrating exposure to the parasite have been developed and can be used in research settings, cost and practicality have prevented these tests from becoming commercially available. Blood smear examination and PCR tests are of little practical value for monitoring exposure, so there is no way to measure the effectiveness of youngstock exposure. Tick control can be used to reduce the risk of the disease by reducing the degree of challenge. Neither synthetic pyrethroids nor macrocyclic lactones have a licence for tick control in UK cattle, although certain preparations may be prescribed for tick control by your vet.

However, tick control could potentially be a double-edged sword in that it may compromise the development of natural immunity in younger animals. This raises the risk of outbreaks when these animals mature. There is a further potential risk when macrocyclic lactones are used as part of a worm control programme, as tick control may also occur as an unintended side effect.

G&S SHOW BBQ!

This year for the Gillingham and Shaftesbury show we will be sending out BBQ tickets for you all to bring to our hospitality tent on show days. These will be sent out with bills and newsletters next month so you have them in plenty of time.

If you require more tickets than we have sent do not hesitate to get in touch and we will get more sent out so everyone gets one. We look forward to seeing you all!

STAFF NEWS:

Congratulations also to Izzie and Tim who have welcomed their little girl Clara! Mum and baby are both doing well and we can't wait to meet her. ❤

DATES FOR YOUR DIARY:

11 MAY

SMALLHOLDERS CLUB MEETING

Come and join us to discuss medicines usage. Thursday 11th May 2023 @ 7pm. Hosted at West Stour Village Hall, SP8 5RL. £10 a person, free for Smallholder Club members!

TBC

INTEREST LISTS:

To register your interest for our next foot trimming, mastering medicines or calving course please contact the farm office and we will add you to our list! Dates to be confirmed. Call us on 01258 472314

RIVER STOUR PHOSPHORUS REDUCTION SCHEME

Wessex Water are offering funding to farmers and landowners for establishing measures to reduce phosphorus run off in the River Stour in Dorset as part of the Phosphorus Reduction Scheme. Measures include watercourse fencing to exclude livestock, cover crops (including undersowing), buffer strips, arable reversion, grassland subsoiling and habitat creation such as establishing ponds, trees, and hedgerows. The scheme is part of a wider programme of investment involving phosphorus removal at Wessex Water recycling centres (sewage treatment works) across the catchments however by working with farmers to reduce phosphorus loss from agricultural (the other main contributor), the overall improvement to water quality can be greater.

For more information including a full list of measures and payment rates, visit www.wessexwater.co.uk/environment/catchment-management/river-stour-phosphorus or contact us on **riverstourphos@wessexwater.co.uk; 07810 852 595**

Cover crops after maize in River Stour catchment funded by the Phosphorus Reduction Scheme