

Equine Piroplasmosis (Commonly known as Biliary) in Horses:

What is Equine Piroplamosis?

Equine Piroplasmosis (EP) is a tick-borne protozoal disease that affects horses, donkeys, mules and zebras. EP is caused by the protozoan parasites, *Babesia caballi* and *Theileria equi*. The disease is endemic in tropical and temperate regions of the world where the competent tick vectors are prevalent, EP has been reported in Asia, South and Central America, Africa, Southern Europe and some parts of the southern USA. The disease is responsible for serious economic losses to the equine industry.

How is Piroplasmosis spread?

Ticks are the confirmed vectors for EP, when an infected tick bites and feeds via a blood meal on the horse it can transmit the disease from one carrier animal to another. Trans-placental transmission from pregnant mares to fetus has been reported and in most cases this leads to abortion. Furthermore, mechanical or iatrogenic transmission by contaminated needles and syringes, blood transfusion, and surgical instruments has also been reported.

What are the clinical signs?

The clinical signs of equine piroplasmosis are often nonspecific, and the disease can easily be confused with other diseases. *Theileria equi* tends to cause more severe disease than *Babesia caballi*. Piroplasmosis can occur in per-acute, acute, sub-acute and chronic forms. Most animals in endemic areas survive infection.

Per-acute form

- Rare form of disease with only clinical observation being moribund or dead animals

Acute form

- Most common form of disease cases
- Characterised by fever that usually exceeds 40°C
- Reduced appetite and malaise
- Elevated respiratory and pulse rates
- Congestion of mucous membranes
- Production of a dark red urine; faecal balls that are smaller and drier than normal
- Affected animals may appear unthrifty; anemic and/or icteric

Sub-acute form •

- Similar to acute form but accompanied by weight loss in affected animals and intermittent fever
- Mucous membranes vary from pale pink to pink, or pale yellow to bright yellow; petechiae and/or ecchymoses may also be visible on the mucous membranes
- Normal bowel movements may be slightly depressed and the animals may show signs of mild colic

Chronic form

- Chronic cases usually present nonspecific clinical signs such as mild inappetence, poor performance and weight loss

How is the diagnosis made?

Laboratory bloods tests are needed to make a diagnosis of EP as the clinical signs for EP are non-specific and similar to many other diseases.

What is the treatment?

Treatment is aimed at reducing the clinical signs and case fatality rate. Antiprotozoal drugs such as imidocarb are used to treat clinical cases in horses and donkeys. Tetracyclines may be used in animals infected with *T. equi* but are reported to be ineffective against *B. caballi*. Supportive care, such as anti-pyrexia medications, immunity boosters and blood transfusions, may be necessary in some animals. It is important to avoid any secondary complications in the acute form of the disease, such as an impaction colic or laminitis.

What is the prognosis?

Asymptomatic infections with *B. caballi* and *T. equi* appear to be common in endemic regions. In some areas, equines are exposed to these organisms when they are young and have some protection from maternal antibodies, and acute clinical cases are reported to be relatively infrequent. They are more likely to be seen when naive animals are introduced to an endemic region, or if an infected animal transmits the disease to equines in a piroplasmosis-free country. The mortality rate is influenced by the specific organism and the level of exposure, the host's health in general, and the availability of good veterinary care. The case fatality rate in horses is usually reported to be in the range of 5-10%, but rates of 50% or higher have been seen in some outbreaks, especially in naive horses. *T. equi* typically causes more severe clinical signs than *B. caballi*; however, some sources speculate that *T. equi* strains may differ in virulence, as the illnesses caused by this organism seem to be more severe in some countries than others. Relapses have been reported in infected horses after stressors or immunosuppression.

How is it prevented?

The proper control of the tick vectors is used for successful control and prevention of EP. This remains a big challenge more especially in tropical and subtropical regions. The use of acaricides on horses is the recommended route to control of the tick vectors.



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