

Ehrlichiosis in Dogs

Signs, Diagnosis and Treatment of Ehrlichiosis in Dogs

Ehrlichia is a type of bacteria that infect dogs and other species worldwide, causing a disease called ehrlichiosis. Ehrlichiosis has also been called tropical canine pancytopenia (and several other names). Ehrlichia is commonly transmitted by ticks.

Cause

Ehrlichia bacteria infect white blood cells. There are many species of *Ehrlichia*, which infect a wide variety of animals, but there are only a few species that affect dogs. A closely related infection affecting platelets is caused by a bacteria called *Anaplasma platys* and is sometimes referred to as ehrlichiosis as well (*Anaplasma platys* used to be called *Ehrlichia platys* until recently).

Most *Ehrlichia* infections are acquired through tick bites. Infection is also possible via blood transfusions.

Risk Factors

Ehrlichiosis occurs worldwide in areas where the ticks that carry the disease are common. While any dog can be infected, some breeds, most notably German shepherds, are prone to more serious chronic infections.

Retired racing greyhounds from areas where ehrlichiosis is common may suffer from chronic, undetected infections and should be checked for ehrlichiosis and other tick-borne diseases when adopted.

Signs and Symptoms of Ehrlichiosis

The symptoms and severity of illness seen with ehrlichiosis depends on the species of *Ehrlichia* involved and the immune response of the dog. Generally, *Ehrlichia canis* appears to produce the most severe illness, and infections tend to progress through various stages.

The **acute phase** occurs within the first few weeks of being infected and is rarely fatal. Recovery can occur, or the dog can enter a "subclinical phase" which can last for years, where there are no symptoms. Some dogs, but not all, eventually progress to the **chronic phase**, where very severe illness can develop. However, in practice it is difficult to distinguish these phases.

Signs and symptoms of ehrlichiosis may include:

- fever
- lethargy
- loss of appetite
- weight loss
- abnormal bleeding (e.g., nosebleeds, bleeding under skin -- looks like little spots or patches of bruising)
- enlarged lymph nodes
- enlarged spleen
- pain and stiffness (due to arthritis and muscle pain)

- coughing
- discharge from the eyes and/or nose
- vomiting and diarrhea
- inflammation of the eye
- neurological symptoms (e.g., incoordination, depression, paralysis, etc.)

Signs of other organ involvement can appear in the chronic form, especially kidney disease.

Note: *Anaplasma platys* causes recurrent low platelet counts but tends to produce only mild symptoms, if any.

Diagnosis of Ehrlichiosis

It can be difficult to confirm a diagnosis of ehrlichiosis. Blood tests typically show a decreased number of platelets ("thrombocytopenia") and sometimes decreased numbers of red blood cells (anemia) and/or white blood cells.

Changes in the protein levels in the blood may also occur. Blood smears can be examined for the presence of the *Ehrlichia* organisms. If they are present, the diagnosis can be confirmed, but they may not always show up on a smear. Blood can also be tested for antibodies to Ehrlichia, though this can sometimes produce incorrect results. Specialized testing can check for genetic material from *Ehrlichia*, and while this is the most sensitive test, it is not widely available and has some limitations as well. Generally, a combination of lab tests along with clinical signs and history are used to make a diagnosis.

The diagnosis is further complicated by the fact that dogs infected with *Ehrlichia* may also be infected with other diseases carried by ticks, such as *Babesia*, Lyme disease, or Rocky Mountain Spotted Fever. Infection with a bacteria called *Bartonella* has also been found in conjunction with Ehrlichiosis and other tick borne diseases. The presence of these other diseases can make symptoms more severe and the diagnosis more complicated.

Treatment of Ehrlichiosis

Ehrlichiosis responds well to treatment with the antibiotic doxycycline. Improvement in symptoms is usually very quick, but several weeks of treatment is usually needed to ensure a full recovery.

In severe cases where blood cell counts are very low, blood transfusions may be needed.

Reinfection is possible as immunity to *Ehrlichia* bacteria is not long lasting.

Prevention of Ehrlichiosis

Preventing exposure to the ticks that carry *Ehrlichia* is the best means of preventing ehrlichiosis. Check your dog daily for ticks and remove them as soon as possible (it is believed that ticks must feed for at least 24-48 hours to spread *Ehrlichia*). This is especially important in peak tick season or if your dog spends time in the woods or tall grass (consider avoiding these areas in tick season).

Products that prevent ticks such as monthly parasite preventatives (e.g., Frontline®, Revolution®) or tick collars (e.g., Preventic®) can be used; be sure to follow your veterinarian's advice when using these products. Keep grass and brush trimmed in your

yard, and in areas where ticks are a serious problem, you may also consider treating the yard and kennel area for ticks.

Please note: this article has been provided for informational purposes only. If your pet is showing any signs of illness, please consult a veterinarian as quickly as possible.

