



CANINE EHRLICHIOSIS

What is canine ehrlichiosis?

Ehrlichiosis is an infectious disease of dogs. It first gained attention as a significant disease when military dogs returning from Vietnam during the 1970's were found to be infected. The disease seems to be particularly severe in German shepherds and Doberman pinchers.

The organism responsible for this disease is a rickettsial organism; rickettsiae are similar to bacteria. *Ehrlichia canis* is the most common species involved in ehrlichiosis, but occasionally, other strains of the organism will be found, i.e., *Ehrlichia platys*. Because of its origin in military dogs in Vietnam, it has also been called "tracker dog disease" and "tropical canine pancytopenia."

How does a dog get infected with ehrlichia?

Ehrlichiosis is transmitted to dogs through the bite of infected ticks; the brown dog tick, *Rhipicephalus sanguineus*, is the main reservoir of the organism in nature.

What are the signs of ehrlichiosis?

Signs of ehrlichiosis can be divided into three stages: acute (early disease), subclinical (no outward signs of disease), and chronic (long-standing infection).

In areas where ehrlichiosis is common, many dogs are seen during the acute phase. Infected dogs may have fever, swollen lymph nodes, respiratory distress, weight loss, bleeding disorders, and, occasionally, neurologic disturbances. This stage may last 2-4 weeks.

The subclinical phase represents the stage of infection in which the organism is present but not causing any sign of disease. Sometimes, a dog will pass through the acute phase without its owner being aware of the infection. These dogs may become subclinical and develop laboratory changes yet have no apparent signs of illness. During this stage, the dog may eliminate the organism, or it may progress to the next stage.

This stage occurs because the immune system is not effective in eliminating or controlling the organism. Dogs are likely to develop a host of problems: anemia, thrombocytopenia (decreased platelets, the blood clotting cells), bleeding episodes, lameness, eye problems (including hemorrhage into the eyes), neurologic problems, and swollen limbs. If the bone marrow (site of blood cell production) fails, the dog becomes unable to manufacture any of the blood cells necessary to sustain life (red blood cells, white blood cells, and platelets).

How is ehrlichiosis diagnosed?

It may be difficult to diagnose infected dogs during the very early stages of infection. The immune system usually takes 2-3 weeks to respond to the presence of the organism and develop antibodies. Since the presence of antibodies to *Ehrlichia canis* is the basis of the most common diagnostic test, such dogs may be infected yet test negative. Testing performed a few weeks later will reveal the presence of antibodies and make confirmation of the diagnosis possible.

Rarely, the organism itself may be seen in blood smears or in aspirates of cells from lymph nodes, spleen, and lungs. This is a very uncommon finding. Therefore, detection of antibodies, coupled with appropriate clinical signs, is the primary diagnostic criteria.

How is ehrlichiosis treated?

Dogs experiencing severe anemia or bleeding problems may require a blood transfusion, initially. However, this does nothing to treat the underlying disease.

Drugs in the tetracycline family are the first choice to rid the dog of the organism that causes ehrlichiosis. Tetracycline hydrochloride and doxycycline are usually quite effective. Sometimes, chloramphenicol is used as a second choice for dogs unresponsive to tetracyclines, but it may have adverse effects on the bone marrow. Recently, evidence has been found that another antibiotic, enrofloxacin, may also be effective.

It has been traditionally recommended to treat infected dogs for 10 - 30 days, depending on the severity of the infection and clinical signs. Some of the newer research suggests that certain dogs may need to be treated for 2-4 months.

What is the prognosis?

Dogs with competent immune systems will usually recover, although they remain susceptible to reinfection. Dogs with weak immune systems and those which have progressed to the terminal stages of infection (bone marrow failure) have a guarded prognosis.

Can anything be done to prevent it?

Ridding the dog's environment of ticks is the most effective means of prevention. When this is not possible, low doses of one of the tetracyclines can be given during tick season.

Can I get ehrlichiosis from my dog?

No. However, humans can get canine ehrlichiosis. The disease is only transmitted to humans through the bites of ticks. Thus, although the disease is not transmitted directly from dogs to humans. Infected dogs serve as sentinels to indicate the presence of infected ticks in the area and may be a source of the organism for infections in humans or other dogs.