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Popular Article

Ehrlichiosis And Anaplasmosis in Dogs

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Introduction

Ehrlichia and Anaplasma are related bacterial genera belongs to the Order Rickettsiales and Family Anaplasmataceae. Ehrlichia and Anaplasma both are obligate intracellular bacteria that are responsible for diseases known as ehrlichiosis and anaplasmosis respectively. The geographic distribution of these diseases is dictated by the distribution of the tick vectors that transmitted them.

Canine monocytic ehrlichiosis is caused by Ehrlichia canis, which predominantly involves monocytes. E. canis is transmitted by the Rhipicephalus sanguineous also known as brown dog tick, which is found worldwide, so the canine monocytic ehrlichiosis also has a worldwide distribution. Acute E. canis cases in dogs may resemble infection with Rickettsia rickettsii (the agent of Rocky Mountain Spotted Fever, which can also be transmitted by the brown dog tick). Rhipicephalus ticks become infected with E. canis after feeding on infected dogs, and ticks transmit infection to other dogs during blood meals taken in successive life stages.

Clinical findings in acute ehrlichiosis include reticuloendothelial hyperplasia, fever, generalized lymphadenopathy, splenomegaly, thrombocytopenia, variable signs of anorexia, depression, loss of stamina, stiffness and reluctance to walk, oedema of the limbs or scrotum, and coughing or dyspnoea may be seen. In acute phase of E. canis infection in dogs, the blood parameter is usually normal but may reflect a mild normocytic, normochromic anaemia, leukopenia, or mild leucocytosis. Thrombocytopenia is also common, but petechiae may not be evident.

Clinical findings of chronic ehrlichiosis based on the predominant organs affected and may include, marked splenomegaly, glomerulonephritis, renal failure, interstitial pneumonitis, anterior uveitis, meningitis (with associated cerebellar ataxia, depression, paresis, and hyperesthesia) and severe weight loss. The hemogram is usually markedly abnormal in chronic cases. Severe thrombocytopenia may cause epistaxis, haematuria, melena and petechiae and ecchymoses of the skin.

Anaplasma phagocytophilum, formerly known as both *E. equi* and the agent of human granulocytic ehrlichiosis, causes illness in dogs and horses. *A. phagocytophilum* is transmitted by *Ixodes scapularis*, the same tick responsible for Lyme disease. *A. platys* is transmitted by *R. sanguineus* and it is enzootic in many parts of the world. Coinfection with *E. canis* occur, because the same tick vector is responsible for transmission of both pathogens. *A. phagocytophilum* infects granulocytes whereas *A. platys* infects platelets in blood. *A phagocytophilum* appear clinically similar to acute *E canis* infection, but the clinical course is usually milder and more self-limiting. Thrombocytopenia and mild leukopenia or leukocytosis may occur during the acute course of infection.

The clinical diagnosis can be confirmed by demonstrating the organisms within WBCs or platelets, seen in intracytoplasmic inclusion bodies called morulae. CBC is an important screening test because hematologic abnormalities are common findings. Serological and molecular tests can be done for confirmatory diagnosis.

To treat infection with *Ehrlichia* and *Anaplasma* spp, doxycycline is the drug of choice because of its superior intracellular penetration and bacteriostatic properties against rickettsiae. Supportive therapy may be necessary in animals with high fever or those with chronic disease complicated by wasting and specific organ dysfunction. Prevention of ehrlichiosis and anaplasmosis is accomplished by controlling ticks on dogs. Long-term tick control is needed for prevention of disease. Collars containing propoxur, amitraz or flumethrin have proven activity against *R. sanguineus*.