

ROCKY MOUNTAIN SPOTTED FEVER

BASICS

OVERVIEW

- A tick-borne rickettsial disease, caused by *Rickettsia rickettsii*, that affects dogs and is considered the most important rickettsial disease in people
- Antibodies to *Rickettsia akari* (causative agent of rickettsial pox in people) have been found in dogs from New York, NY; unknown if this *Rickettsia* causes disease in dogs
- Other as yet undefined rickettsial organisms may cause clinical signs in dogs

SIGNALMENT/DESCRIPTION of ANIMAL

Species

- Dogs

Breed Predispositions

- Purebred dogs seem more prone to developing clinical illness than do mixed-breed dogs
- German shepherd dogs—more common

Mean Age and Range

- Any age

SIGNS/OBSERVED CHANGES in the ANIMAL

- Fever—within 2 to 3 days of attachment of a tick carrying *Rickettsia rickettsii*
- Sluggishness (lethargy)
- Depression
- Lack of appetite (known as “anorexia”)
- Swelling and fluid build-up in the tissues (known as “edema”)—face, lips, scrotum, prepuce, ears, legs
- Stiff gait
- Spontaneous bleeding—sneezing; bleeding in the nose and nasal passages (known as “epistaxis” or a “nosebleed”); black, tarry stools due to the presence of digested blood (known as “melena”); blood in the urine (known as “hematuria”)
- Nervous system signs—wobbly, incoordinated or “drunken” appearing gait or movement (known as “ataxia”); head tilt; altered mental status; seizures
- Eye pain
- Ticks may be present on the dog
- May have death of tissues (known as “necrosis”) on the legs
- Inflammation of the moist tissues of the eyes (known as “conjunctivitis”)
- Difficulty breathing (known as “dyspnea”), exercise intolerance, breathing distress, increased lung sounds when listening to the chest with a stethoscope
- Generalized enlarged lymph nodes (known as “lymphadenopathy”)
- Muscular pain (known as “myalgia”) and/or joint pain (known as “arthralgia”)
- Small, pinpoint areas of bleeding (known as “petechia”)
- Bruises or purplish patches, due to bleeding (known as “ecchymoses”)—involving the eyes, mouth, and genital regions; seen in 20% of patients
- Irregular heart beats (known as “cardiac arrhythmias”)—sudden death
- Blood-clotting disorder (known as “disseminated intravascular coagulopathy” or “DIC”) and death from shock—in severe, sudden (acute) cases

CAUSES

- *Rickettsia rickettsii*

RISK FACTORS

- Exposure to ticks carrying *Rickettsia rickettsii*
- Co-infection with other tick borne disease-causing agents

TREATMENT

HEALTH CARE

- Inpatient, until stable and showing response to treatment
- Dehydration—balanced fluids, administered cautiously to avoid increasing fluid build-up in the tissues (such as the brain [known as “cerebral edema”] or lungs [known as “pulmonary edema”])
- Low red-blood cell count (known as “anemia”)—blood transfusion

- Bleeding from low platelet count (known as “thrombocytopenia”)—platelet-rich plasma or a blood transfusion; “platelets” and “thrombocytes” are names for the normal cell fragments that originate in the bone marrow and travel in the blood as it circulates through the body; platelets act to “plug” tears in the blood vessels and to stop bleeding

ACTIVITY

- Restricted

SURGERY

- If surgery is required for other reasons, blood transfusion may be needed to correct low red-blood cell counts (anemia) and/or low platelet counts (thrombocytopenia)

MEDICATIONS

Medications presented in this section are intended to provide general information about possible treatment. The treatment for a particular condition may evolve as medical advances are made; therefore, the medications should not be considered as all inclusive.

- Doxycycline—synthetic derivative of tetracycline, administered by mouth for 10 days or intravenously (IV) for 5 days, if patient is vomiting
- Prednisone—used to decrease inflammation; may be given early in course of disease
- Other antibiotics (tetracycline, chloramphenicol, and enrofloxacin)—are effective, if used early

FOLLOW-UP CARE

PATIENT MONITORING

- Monitor platelet count every 3 days until it has returned to normal

PREVENTIONS AND AVOIDANCE

- Control tick infestation on dogs—use dips or sprays containing dichlorvos, chlorfenvinphos, dioxathion, propoxur, or carbaryl; any product used to control ticks should be used only as directed by the product label
- Flea and tick collars—may reduce re-infestation of ticks; reliability has not been proven
- Avoid tick-infested areas
- Environment—tick eradication impossible; tick populations are maintained in rodents and other reservoir hosts
- Removing ticks by hand—use gloves; ensure mouth parts are removed, because a foreign body reaction is likely to result in the skin, if they are left in place

POSSIBLE COMPLICATIONS

- Death

EXPECTED COURSE AND PROGNOSIS

- Early antibiotic treatment—reduces fever and improves patient’s attitude within 24 to 48 hours
- Platelet counts—should return to normal within 2 to 4 days after initiating treatment
- Serologic tests (blood tests that detect the presence of antibodies to a certain disease-causing agent or antigen; an “antibody” is a protein that is produced by the immune system in response to a specific antigen)—lower in treated than in untreated dogs; titers remain positive during the recovery period
- Naturally infected dogs never seem to become reinfected
- Clinical Rocky Mountain spotted fever—variable in severity of disease; lasts 2 to 4 weeks, if untreated
- Sudden (acute) cases—excellent prognosis with appropriate treatment
- Central nervous system disease—poor prognosis

KEY POINTS

- Prognosis—good in sudden (acute) cases, with appropriate and prompt treatment
- Response occurs within hours of treatment
- If treatment is not instituted until central nervous system signs occur or later in the disease process, death rate is high; patient with central nervous system signs may die within hours