ROCKY MOUNTAIN SPOTTED FEVER

REPORTING INFORMATION

- Class A(3)
- Report by the end of the work week.
- Confidential Case Report Card (3812.11 rev. 12/81), lab report (3833.11), or telephone
- Requires completion of CDC's Rocky Mountain Spotted Fever Case Report form (CDC 55.1). To be sent by the local health department to the Vector-borne Disease Program, 900 Freeway Drive North, Columbus, OH 43229..

AGENT

Rickettsia rickettsii, a bacterium in the spotted fever group.

CASE DEFINITION

Clinical description

A tickborne febrile illness most commonly characterized by acute onset and usually accompanied by myalgia, headache, and petechial rash (on the palms and soles in two thirds of the cases)

Laboratory criteria for diagnosis

- Fourfold or greater rise in antibody titer to *Rickettsia rickettsii* antigen by immunofluorescence antibody (IFA), complement fixation (CF), latex agglutination (LA), microagglutination (MA), or indirect hemagglutination antibody (IHA) test in acute- and convalescent-phase serum samples ideally taken ≥ 3 weeks apart, or
- Positive polymerase chain reaction assay to *R. rickettsia*, or
- Demonstration of positive immunofluorescence of skin lesion (biopsy) or organ tissue (autopsy), or
- Isolation of *Rickettsia rickettsii* from clinical specimen

Case classification

Probable: a clinically compatible case with a single IFA serologic titer ≥ 64 or a single CF titer of ≥ 16 or other supportive serology (fourfold rise in titer or a single titer ≥ 320 by Proteus OX-19 or OX-2, or a single titer ≥ 128 by an LA, IHA or MA test).

Confirmed: A clinically compatible case that is laboratory confirmed.

SIGNS AND SYMPTOMS

Sudden onset of headache, myalgia, malaise and fever (usually >100.5^{o} F) within 2-12 days of tick contact. In the typical case, a maculopapular rash is noted on day two or three of fever. The rash starts on the wrists and ankles, and spreads to involve the palms and soles and the trunk. Sometimes the rash is absent. The case fatality rate in the United States is 4%.

DIAGNOSIS

Evaluation of an acute and a convalescent serum is recommended. The convalescent serum should be drawn about three weeks post-onset. The single convalescent serum is acceptable for testing if the acute is not available.

The Weil-Felix test (Proteus OX-19) is not specific for RMSF.

EPIDEMIOLOGY

Source

Rickettsia rickettsii is maintained and amplified in American dog tick, *Dermacentor variabilis*, populations through transovarial and venereal transmission. Amplification of the organism also occurs in meadow voles, one of the vertebrate hosts of immature ticks.

Occurrence

Although other species of rickettsiae cause similar illnesses worldwide, *R. rickettsii* is restricted to the Americas. In the United States, RMSF was first described from the Rocky Mountain region, but now the majority of cases are reported from the southern states, from North Carolina to Oklahoma. In 1997, 409 cases were reported to the Centers for Disease Control and Prevention. From 1956 to 1997, 704 cases have been reported in Ohio. The five-year median number of cases reported in Ohio is 14.6. Although all ages are susceptible, children predominate, probably because of greater contact with dogs and tick habitat. Most cases occur in May and June, the peak American dog tick season in Ohio, with fewer cases from July to September.

Mode of Transmission

Dermacentor variabilis, the American dog tick, is the vector of *R. rickettsii* in Ohio. Humans contract RMSF through the bite of the dog tick, or by coming in contact with tick secretions or body fluids through careless handling of ticks. Dogs can transport ticks into the household environment, and can also become ill with spotted fever.

Period of Communicability

Humans are dead-end hosts, not being able to infect ticks or other humans.

Incubation Period

The incubation period is 2 to 12 days after infected tick contact.

PUBLIC HEALTH MANAGEMENT

Case

Investigation

A history of the patient's travel and contact with dogs and ticks is obtained for the two to three weeks prior to onset.

Treatment

A high index of suspicion of RMSF is warranted for the febrile patient with a history of tick contact in the past 12 days, especially in known endemic areas. Treatment with tetracycline or chloramphenicol should be initiated immediately, without waiting for test results. Antibiotic therapy is indicated until the patient is afebrile, then for 48 hours.

Isolation

None indicated.

Contacts

No treatment or prophylaxis of contacts is indicated. There is currently no vaccine for RMSF.

Prevention and Control

With the identification of endemic areas from case investigations, community education and awareness activities should be initiated before the beginning of tick season (late April). Area residents should be made aware of RMSF symptoms, measures to reduce tick infestations (mowing, dog control, daily inspections of dogs), and precautions on handling ticks to reduce exposure. Specific fliers and posters and informative articles in the media can all be used to promote public awareness of ticks and RMSF.

SPECIAL INFORMATION

Rabies, Lyme Disease, and Rickettsial Diseases Hotline

CDC's Viral and Rickettsial Zoonoses Branch, Division of Viral and Rickettsial Diseases, Center for Infectious Diseases, now has a 24-hour-a-day automated telephone system that provides information to the public on rabies, Lyme Disease, Rocky Mountain Spotted Fever, and human ehrlichiosis. Menu options include information on animal and tick bites, requests for written information, rabies prevention recommendations for international travelers, and the procedure for reporting rabies vaccine reactions.

CDC INFORMATION HOTLINE: 1-888-232-3228
CDC information can also be accessed on their web site, www.cdc.gov.