

Query Fever

Also Known As: Q Fever

What is Query Fever?

Query fever is a worldwide disease with acute and chronic stages caused by the bacteria *Coxiella burnetii*.

Spread of Disease



Cattle, sheep, and goats are the primary reservoirs although a variety of species may be infected. Organisms are excreted in milk, urine, and feces of infected animals. During birthing the organisms are shed in high numbers within the amniotic fluids and the placenta. The organism is extremely hardy and resistant to heat, drying, and many common disinfectants which enable the bacteria to survive for long periods in the environment. Infection of humans usually occurs by inhalation of these organisms from air that contains airborne barnyard dust contaminated by dried placental material, birth fluids, and excreta of infected animals. Other modes of transmission to humans, including tick bites, ingestion of unpasteurized milk or dairy products, and human to human transmission, are rare. Humans are often very susceptible to the disease, and very few organisms may be required to cause infection.

Signs and Symptoms

Query fever can cause acute or chronic illness in humans, who usually acquire infection after contact with infected animals or exposure to contaminated environments. The acute symptoms caused by infection with *Coxiella burnetii* usually develop within 2-3 weeks of exposure, although as many as half of humans infected with *C. burnetii* do not show symptoms.

The following is a list of symptoms commonly seen with acute Q fever. However, it is important to note that the combination of symptoms varies greatly from person-to-person.

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|---------------------------|------------------------|------------------|
| ▪ high fevers (104-105°F) | ▪ myalgia | ▪ vomiting |
| ▪ severe headache | ▪ chills and/or sweats | ▪ diarrhea |
| ▪ general malaise | ▪ non-productive cough | ▪ abdominal pain |
| | ▪ nausea | ▪ chest pain |

Although most persons with acute Query fever infection recover, others may experience serious illness with complications that may include pneumonia, granulomatous hepatitis (inflammation of the liver), myocarditis (inflammation of the heart tissue) and central nervous system complications. Pregnant women who are infected may be at risk for pre-term delivery or miscarriage.

Chronic Q fever is a severe disease occurring in less than 5% of acutely infected patients. It may present soon after an acute infection, or may manifest years later. The three groups at highest risk for chronic Q fever are pregnant women, immunosuppressed persons and patients with a pre-existing heart valve defects.

Query fever has the ability to persist for long periods of time in the host after infection, although the majority of people recover completely. A post-Q fever fatigue syndrome has been reported to occur in some acute patients. This syndrome is characterized by constant or recurring fatigue, night sweats, severe headaches, photophobia (eye sensitivity to light), pain in muscles and joints, mood changes, and difficulty sleeping.

Diagnosis

Diagnosis of Query fever is made based on signs and symptoms and a high index of clinical suspicion. Diagnosis can later be confirmed using specialized confirmatory laboratory tests. Treatment should never be delayed pending the receipt of laboratory test results, or be withheld on the basis of an initial negative laboratory result.

Treatment

Doxycycline is the first line treatment for all adults, and for children with severe illness. Treatment should be initiated immediately whenever Query fever is suspected.

People at Risk

In the United States, Query fever outbreaks have resulted mainly from occupational exposure involving veterinarians, meat processing plant workers, sheep and dairy workers, livestock farmers, and researchers at facilities housing sheep. Prevention and control efforts should be directed primarily toward these groups and environments.

Prevention

The following measures should be used in the prevention and control of Query fever:

- Appropriately dispose of placenta, birth products, fetal membranes, and aborted fetuses at facilities housing sheep and goats.
- Restrict access to barns and laboratories used in housing potentially infected animals.
- Use only pasteurized milk and milk products.
- Use appropriate procedures for bagging, autoclaving, and washing of laboratory clothing.
- Vaccinate (where possible) individuals engaged in research with pregnant sheep or live *C. burnetii*.
- Quarantine imported animals. Ensure that holding facilities for sheep should be located away from populated areas.
- Animals should be routinely tested for antibodies to *C. burnetii*, and measures should be implemented to prevent airflow to other occupied areas.



For more sources of information on this topic visit:

ST. CLAIR COUNTY HEALTH DEPARTMENT www.scchealth.co

MICHIGAN DEPARTMENT OF HEALTH AND HUMAN SERVICES www.michigan.gov/mdhhs

CENTERS FOR DISEASE CONTROL AND PREVENTION www.cdc.gov