

**Florida Poison Information Center/Jacksonville**  
**At Shands Jacksonville**  
**University of Florida Health Science Center**  
**1-800-222-1222**

## Q Fever

### **Mechanism of Action**

The causative agent of Q fever is *Coxiella burnetii*, a rickettsial organism. The natural reservoirs include sheep, cattle and goats. The mode of transmission is via aerosolization of organisms.

### **Properties**

*Coxiella burnetii* inhalation can result in illness after the inhalation of a single organism. Q fever rarely results in death with a mortality rate of one to three percent. The organism also possesses the capacity to form spore like forms and persist for prolonged periods in an environment. The illness is generally an undifferentiated febrile illness lasting two to three weeks with onset of symptoms as early as ten days after exposure. The biological warfare potential is as an incapacitating agent after aerosolization.

### **Symptoms**

The illness Q fever presents as an undifferentiated febrile illness with the following symptoms: fever, nonproductive cough, headache, weakness and pleuritic chest pain. Onset may be sudden or insidious in nature. Symptoms can be present as soon as ten days post exposure and may last two to three weeks. The patients are generally not critically ill. Pneumonia may or may not be present. The presentation is not clinically distinct and could resemble a number of clinical entities. Included in these is atypical pneumonia or viral syndrome.

### **Medical Management**

*Decontamination* should be conducted with soap and water. Person-to-person transmission is rare. Patients exposed via aerosol do not present a risk for secondary contamination.

*Diagnosis*- Culture of the *C. burnetii* is not recommended since a single organism can cause illness. This would place laboratory personnel at too great a risk. Serologic testing using is recommended for diagnosis.

*Antibiotics*- Q fever is generally a self-limited illness even without treatment. The following antibiotics have been used:

- Tetracycline
- Doxycycline

Chloramphenicol would also be effective if deemed necessary or if in a child less than seven years of age.

*Vaccination post-exposure-* An inactivated whole cell vaccine exists as an investigational drug for post exposure treatment. However, severe local reactions including sterile abscess formation can occur for those previously exposed. This necessitates skin testing.

*Vaccination pre-exposure-* In Australia a formalin inactivated whole cell vaccine exists from which a single dose offers complete protection for naturally Q fever and greater than 95% protection against aerosolization for five years.

*Chronic State -* A chronic condition of granulomatous hepatitis and culture negative endocarditis has rarely been noted and may require more prolonged treatment in conjunction with an infectious disease specialist.

### **Bibliography**

1. Auerbach PS, Wilderness Medicine Management of Wilderness and Environmental Emergencies. Third Edition, 1995.
2. Biological Agent Information Papers. United States Department of Defense
3. Gilbert DN, et al. The Sanford Guide to Antimicrobial Therapy 1998.
4. Medical Management of Biological Casualties Handbook. United States Army. 1998.
5. Nelson JD. Pocket Book of Pediatric Antimicrobial Therapy 1997.

Call the Florida Poison Information/Network for information and/or to report exposures.



**1-800-222-1222**

**Florida Poison Information Center Network**

**Centers are located in Jacksonville, Tampa, & Miami**