

Prophylaxis after Coxiella burnetii Exposure

[Announcer] This podcast is presented by the Centers for Disease Control and Prevention. CDC — safer, healthier people.

[Dan Rutz] Hello, I'm Dan Rutz speaking today with Dr. David Swerdlow, who at the time of this research was chief of the Epidemiology Team, Rickettsial Zoonoses Branch, at CDC's National Center for Zoonotic, Vector-Borne, and Enteric Diseases. We're here to talk about an article in the October 2008 issue of Emerging Infectious Diseases on prophylaxis after *Coxiella burnetii* exposure. So tell me David, what is *Coxiella burnetii*?

[Dr. David Swerdlow] *Coxiella burnetii* is an intracellular bacterium that causes Q fever. The organism is endemic in most countries and is found in many animals, including cattle, sheep, and goats. The infection results from inhalation of contaminated particles in the air and from direct contact with feces or secretions of infected animals. The incubation period is 9 to 40 days. Humans are an accidental host. Infection with *Coxiella burnetii* can be asymptomatic, acute, or chronic. Symptoms of the acute disease include a flu-like illness with fever and chills, which usually resolves. Chronic disease can also occur and is much more serious. Endocarditis is the most common chronic condition to result from Q fever infection and is associated with significant death rates. *Coxiella burnetii* is a category B bioterrorism agent because it is highly infectious, rather resistant to heat and drying, and can become airborne and inhaled by humans. A single *C. burnetii* organism may cause disease in a susceptible person. This agent could be developed for use in biologic warfare and is considered a potential terrorist threat.

[Dan Rutz] What was your study about?

[Dr. David Swerdlow] If there were an intentional spread of *Coxiella burnetii*, we didn't know who should be given preventative treatment, called post-exposure prophylaxis or PEP, to prevent illness. We know how to treat people once they become sick, but we didn't know if people should be treated before they became sick, following a natural or intentional exposure. Our study was conducted to help us determine who should receive PEP following an intentional exposure. We looked at three categories of people who might need to be treated: the general population, those with pre-existing heart disease or who are immunocompromised, and those who are pregnant.

[Dan Rutz] What made you choose these three categories of people?

[Dr. David Swerdlow] People with pre-existing heart disease or people who are immunocompromised are more likely to get the chronic, severe form of Q fever. Pregnant women are also at high risk following exposure to *Coxiella burnetii*. The organism has a propensity to affect the placenta which can lead to premature birth or spontaneous abortion. Q fever can also be very harmful to the unborn child resulting in low birthweights.

[Dan Rutz] Tell us a bit more please about the study.

[Dr. David Swerdlow] We made a decision tree to determine the risks and benefits of post-exposure prophylaxis among the three categories of people after an intentional release. We compared the risks of having adverse events from antibiotic treatment with the benefits derived from preventing cases of Q fever.

[Dan Rutz] And what did you find?

[Dr. David Swerdlow] We found that following a likely exposure, the risk of Q fever is greater than the risk of adverse events from antibiotic treatment. In other words, we would recommend that people who were likely exposed should be given PEP to prevent Q fever. So in the setting of a bioterrorism event, PEP could save many lives.

[Dan Rutz] What's the public health importance of this study?

[Dr. David Swerdlow] Being prepared for bioterrorism events is very important. It is crucial to know who should be treated and how, following an intentional release with possible BT agents, including *Coxiella burnetii*. This study will be used when developing post-exposure treatment guidelines, which will make us better prepared in the event of a bioterrorist attack.

[Dan Rutz] Thank you, David. Our discussion today with Dr. David Swerdlow was prompted by an article in the October 2008 issue of Emerging Infectious Diseases. These articles, and others on emerging bacterial and viral diseases, can be read online at www.cdc.gov/eid. Again, that's www.cdc.gov/eid. And you can submit your comments for this interview to eideditor@cdc.gov. That's eideditor - one word - at cdc.gov. For Emerging Infectious Diseases, I'm Dan Rutz.

[Announcer] For the most accurate health information visit www.cdc.gov or call 1-800-CDC-Info, 24/7.