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BRUCELLOSIS: Health Care Information

Brucellosis is a worldwide zoonosis that is transmitted to humans primarily through direct exposure to animal secretions, inhalation of infected aerosols and the ingestion of unpasteurized dairy products. Common animal reservoirs include goats, sheep, camels, cattle and pigs. It is primarily an occupational disease of abattoir workers, farmers, veterinarians and laboratory workers. *Brucellae* are easily aerosolized and have a very low infective dose (10 to 100 bacteria). The organism is an intracellular pathogen and induces a chronic granulomatous infection (similar to tuberculosis) in affected organs.

Signs and Symptoms:

ACUTE: After an incubation period of 1 to 24 weeks (average 2 to 4 weeks), non-specific symptoms begin, including **fever (undulating), headache, weakness, fatigue, chills, sweating, arthralgias, myalgias, cough, meningo-encephalitis, lymphadenopathy and hepatosplenomegaly.** Fatalities are uncommon.

CHRONIC: (>6 months) Non-specific CNS signs such as **chronic headache, chronic fatigue, depression/anxiety, weight loss, arthritis, sacroiliitis, spondylitis and epididymo-orchitis.**

Diagnosis: Consider risk factors such as occupation, travel, animal exposure and consumption of unpasteurized dairy foods. Common laboratory findings include leucopenia, anemia, thrombocytopenia and elevated transaminases. Blood and bone marrow culture during the acute phase of the illness will yield positive results in 15 to 70% and 92%, respectively. The organism is slow growing and cultures should be kept for 6 weeks. Notify your laboratory of any potential *Brucellae* culture (biosafety Level 3 practice should be used in the laboratory). Other sensitive diagnostic methods include serum agglutination test (SAT), enzyme linked immunoabsorbent assays (ELISA) and PCR. Bone marrow, liver or lymph node biopsies may show non-caseating granulomas. Diagnosis is usually more challenging in the chronic stage.

Decontamination: Patients who were recently exposed to airborne *Brucellae* require removal of their clothing and washing of all exposed skin with soap and water. Patients who are symptomatic (i.e., exposed several weeks ago) do not require decontamination.

Treatment: CHECK WITH YOUR LOCAL PUBLIC HEALTH AGENCY AND THE CDC FOR UPDATES.

Adults: Rifampin 600 to 900 mg PO once a day x 6 weeks **PLUS**

One of the following: Doxycycline 100 mg PO twice daily x 6 weeks (preferred) **OR**
Gentamicin 2 mg/kg q8h IV/IM x 7 days **OR**
Ciprofloxacin 500 mg PO twice daily x 6 weeks

Pregnant: Rifampin 900 mg PO once a day x 6 weeks

Children < 8 years: TMP/SMZ (5 mg/kg TMP) PO twice daily x 6 weeks **PLUS**

One of the following: Gentamicin 2mg/kg q8h IV/IM x 7 days (preferred) **OR**
Rifampin 10 mg/kg/d PO once daily x 6 weeks

Prophylaxis: No approved human vaccine is available. Oral therapy with antibiotics as above can be considered for exposed, asymptomatic individuals.

Isolation and Personal Protection: No significant person-to-person transmission occurs with casual contact. The bacteria may be transmitted by body fluid exposure. Health care workers should follow standard precautions. Respiratory isolation usually is **NOT** necessary. If health care workers will be exposed to a large concentration of aerosolized particles (i.e., intubation, suctioning, laboratory), they should wear P100 masks. Environmental decontamination can be accomplished with a 0.5% hypochlorite solution.

Resource Links: <http://www.bt.cdc.gov/agent/brucellosis/>