

# FACT SHEET

# BRUCELLOSIS

## Information for Health Professionals

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### **What is brucellosis?**

Brucellosis is a systemic bacterial infectious disease caused by the bacterium *Brucella abortus*, *B. melitensis*, *B. suis*, and *B. canis*. Although brucellosis infection has a low mortality rate, it can be an incapacitating and disabling disease in its natural form.

### **How is the disease transmitted?**

Cattle, swine, goats and sheep are the primary reservoirs. Brucellosis is transmitted by contact with tissues, blood, urine, vaginal discharges, aborted fetuses and placentas; and by ingestion of raw milk and unpasteurized dairy products from infected animals. Airborne infection of humans occurs in laboratories and meat packing plants. Person-to-person transmission is rare. The incubation period is usually 5 - 60 days.

### **What are the symptoms of brucellosis?**

Brucellosis may present as a non-specific febrile illness with fever, headache, myalgia, arthralgia, back pain, sweats, chills, and generalized weakness and malaise as common complaints. Cough and pleuritic chest pain may occur in up to 20% of cases. Gastrointestinal symptoms occur in up to 70% of adult cases. Hepatomegaly and splenomegaly can occur in up to 60% of cases. Osteoarticular complications, including sacroiliitis, are seen in 20% - 60% of cases. Genitourinary involvement and skin rashes are reported with lesser frequency. The case-fatality rate of untreated brucellosis is < 2% and usually results from endocarditis. Rarely, patients may exhibit a draining fistula from an infection that occurred several years earlier.

### **How is the diagnosis made?**

Chest x-ray may be normal, or it may show lung abscesses, bronchopneumonia, enlarged hilar lymph nodes, and pleural effusions. Vertebral involvement may be demonstrated by plain radiographs, CT scan or MRI. Bone scans are 90% sensitive for detecting sacroiliitis. Peripheral joint effusions usually show mononuclear cell predominance. Culture of joint effusions or CSF has sensitivity of 50%. Cultures of blood and bone marrow during the acute febrile phase are up to 70% - 90% positive respectively. *Brucella* antibodies can be demonstrated by serum agglutination and ELISA tests.

### **What is the treatment for brucellosis?**

Doxycycline 200 mg/day orally plus rifampin 600-900 mg/day for a minimum of 6 weeks. Ofloxacin 400 mg/day and rifampin 600 mg/day orally is also an effective combination. Combination therapy with rifampin, tetracycline, and an aminoglycoside is indicated for infections with complications such as meningoencephalitis or endocarditis.

### **What are the isolation precautions for brucellosis?**

Healthcare workers should use standard precautions when caring for persons with brucellosis.

### **Is there prophylactic treatment after exposure?**

Although efficacy has not been demonstrated in clinical trials, it is recommended that people inadvertently inoculated with Strain 19 or Rev-1 animal vaccines be given doxycycline 100mg twice daily, combined with rifampin 600-900mg once daily for 21 days; for conjunctiva inoculations, prophylaxis should be maintained for 4 - 6 weeks. Prophylaxis for exposure to RB51 vaccine strain would exclude rifampin because the organism was developed in rifampin media and is resistant in vitro.