BRUCELLOSIS

Epidemiology

Source:
Wild & domesticated animal blood & body fluid; unpasteurized milk products

Transmission
- Inoculation of cuts
- Inhalation of contaminated aerosols
- Contact with conjunctiva mucosa
- Oral ingestion

Infectious dose
10-100 bacteria

Incubation
3-4 wks
(<1wk-several mos.)

Clinical case definition
- Acute or insidious onset of symptoms
- Fever, night sweats, malaise, weakness, anorexia, weight loss, arthralgia, myalgia, abdominal pain, headache
- Lymphadenopathy, hepatosplenomegaly, arthritis

Transmissibility: Contact with internal infected tissue

Complications:
Meningitis, endocarditis, osteomyelitis

1 to 5 cases/yr in LA: at increased risk
Hog hunters, farm/livestock, veterinarians, meat inspectors, slaughterhouse workers, lab technicians

Diagnosis

Brucella- small, nonmotile, gram-negative coccobacilli.

Brucella melitensis – goats, sheep, camels. Most common and most virulent;

B. abortus- cattle, camels; ***B. suis***- pigs; ***B. canis-*** dogs (least common)

Probable: a clinically compatible case that is epidemiologically linked to a confirmed case or that has supportive serology
Confirmed: Clinically compatible case that is laboratory confirmed

Lab Diagnosis

- **Culture:** Isolation of *Brucella* spp. from a clinical specimen.(blood, bone marrow, other tissue on a variety of media, incubated for a minimum of 4 wks.)
- **Serologic Testing:**

-Brucella agglutination titer of greater than or equal to 160 in serum after onset

-Fourfold rise in agg. Titer two weeks apart.

-Increased IgG agglutinins. Will not detect *B. canis*.

- **IFAC:** Demonstration by immunofluroescence of *Brucella* spp. in a clinical specimen.

Serologic False positives are common- test only those with compatible symptoms and history of travel, consumption of unpasteurized dairy product, hunting, or lab exposure

Send culture to State Lab

Treatment, Prophylaxis

Treatment

- Prolonged antimicrobial therapy. Relapse possible if discontinued early.
- Combination therapy recommended to avoid relapse
- Cyclines are **not** recommended for children younger than 8 yrs. old
- **Oral doxycycline** (2-4 mg/kg per day; max 200 mg/day; in 2 divided doses; 6 wks)
- **Oral tetracycline** (30-40 mg/kg per day; max 2g/day; 4 divided doses; 6 wks)
- **Oral trimethoprim-sulfamethoxazole** (trimethoprim, 10 mg/kg per day; max 480 mg/d, and sulfamethoxazole, 50 mg/kg per day; max 2.4 g/d; 4-8 wks)
- **Rifampin** (15-20 mg/kg per day; max 600-900 mg/d; 1 or 2 divided doses) recommended in combination with cyclines or trimethoprim-sulfamethoxazole therapy to avoid relapse
- **Streptomycin** or **gentamicin** recommended for the first 14 days to treat serious complications (meningitis, endocarditis, osteomyelitis)

Prophylaxis

- Indicated for workers exposed to the bacteria when significant exposure has been determined (Lab Tech)
- Use same antibiotic therapy as that used to treat cases

Control

Standard, contact precautions

Immunization available but efficacy is unproven

- Eradication of *Brucella* species from cattle, goats, swine, other animals
- **Pasteurization** of milk and milk products for human consumption (esp. for children)