

TULAREMIA

Epidemiology

Source:

- Water, soil
- Wild animals (rabbits, rodents),
- Domesticated animals,
- Blood-sucking arthropods (ticks),

Transmission

- Bite of an infected arthropod
- Direct contact w/ infected animal
- Ingestion of infected animal
- Inhalation of aerosolized organisms

Infectious dose:

10 to 50 organisms

Incubation
3-5 days (1-20 days)

- Human-to-human spread does not occur
- Bioterrorism agent

<5 cases/year in LA

Clinical case definition

Chills, fever, myalgia, headache, skin rash

Ulceroglandular: cutaneous ulcer with regional lymphadenopathy

Glandular: regional lymphadenopathy with no ulcer

Oculoglandular: severe conjunctivitis with preauricular lymphadenopathy

Oropharyngeal: exudative stomatitis, pharyngitis, tonsillitis; cervical lymphadenopathy

Intestinal: abdominal pain, vomiting, diarrhea.

Pneumonic: fever, dry cough, chest pain, hilar adenopathy

Typhoidal: high fever, hepatomegaly, splenomegaly

Complications:

suppuration of involved lymph nodes, renal failure, jaundice, hepatitis, rhabdomyolysis

Death rate: < 4%

Differential:

Similar to many other diseases including cat-scratch disease, Q fever, streptococcal pharyngitis (pneumonic), syphilis, tuberculosis, anthrax, plague, herpes simplex virus infection

Diagnosis

Send culture to OPH

Francisella tularensis, Gram negative coccobacillus

Lab Diagnosis

- **Polymerase chain reaction assays**
- **Serologic testing:**
 - single serum antibody titer of $\geq 1:128$ by microagglutination or $\geq 1:160$ by tube agglutination
 - fourfold titer change between 2 sera obtained at least 2 weeks apart
- **Direct fluorescent antibody** staining of smears and tissues
- **Alert laboratory of suspected *F. tularensis* b/c it easily causes lab acquired infections**

Lab Risk

Probable: Clinically compatible case with either

- Elevated serum antibody titers to *F. tularensis* antigen with no history of tularemia vaccination or
- Detection of *F. tularensis* in a clinical specimen by fluorescent assay

Confirmed: Clinically compatible case with either

- Isolation in a clinical specimen or
- Four-fold \uparrow in serum antibody titer

Treatment, Prophylaxis

Treatment

- **Streptomycin**
 - 7.5 to 10 mg/kg IM q 12 hours for 7 - 14 days
 - In very sick patients, 15 mg/kg q 12 hours may be given throughout a 7- to 10-day course.
 - Pediatric: 30 to 40 mg/kg/day intramuscularly in 2 divided doses for 7 days
 - Gentamicin is an alternative
- Doxycycline, ciprofloxacin, imipenem-cilastatin, and chloramphenicol may be used for less severe cases but have higher relapse rates

Prophylaxis

Not recommended after potential exposures of unknown risk (tick bites).

Standard precautions

Control

Report case immediately to OPH

Preventive measures:

- Wear protective clothing & insect repellents to prevent arthropod bites
- Wear rubber gloves, masks, protective eye cover when handling dead animals (hunters, trappers, etc.)
- Cook wild game thoroughly