



**Disaster and Terrorism Response:
Emergency Preparedness Tools for Pharmacists and
Health-System Pharmacy Departments
FACT SHEET**

TULAREMIA

BACKGROUND: Tularemia is an infection caused by the bacterium *Francisella tularensis*. People can develop tularemia in a variety of ways, such as through the bite of an infected insect or other arthropod (usually a tick or deerfly), handling infected animal carcasses, eating or drinking contaminated food or water, or inhaling *F. tularensis*. It is considered to be a dangerous potential biological weapon because of its extreme infectious potential, ease of dissemination, and substantial capacity to cause illness and death. As a bioterrorism weapon, tularemia is likely to be transmitted through the dispersion of aerosolized bacteria.

TRANSMISSION: *Francisella tularensis* is a hardy non-spore forming organism that is capable of surviving for weeks at low temperatures in water, moist soil, hay, straw or decaying animal carcasses. Tularemia cannot be transmitted person-to-person.

CLINICAL EFFECTS: Aerosol dissemination of *F. tularensis* in a populated area would be expected to result in the abrupt onset of large numbers of cases of acute, non-specific febrile illness beginning 3 to 5 days later (incubation range, 1-14 days), with pleuropneumonitis developing in a significant proportion of patients over the ensuing days and weeks.

Symptoms of tularemia may include:

- Sudden fever
- Chills
- Headaches
- Muscle aches
- Joint pain
- Dry cough
- Progressive weakness
- Pneumonia. Persons with pneumonia can develop chest pain and hemoptysis and shortness of breath.

Other symptoms of tularemia depend on how a person was exposed to the tularemia bacteria. These symptoms may include:

- Ulcers on the skin or in the mouth
- Swollen and painful lymph nodes
- Swollen and painful eyes
- Sore throat.

Symptoms usually appear 3 to 5 days after exposure to the bacteria, but may take as long as 14 days. Without antibiotic treatment, the clinical course could progress to respiratory failure, shock and death.

TREATMENT: Tularemia is not known to be spread from person-to-person contact, so people who have tularemia do not need to be isolated. Since the disease can be rapidly fatal, people who have been exposed to *F. tularensis* should be treated as soon as possible with aminoglycosides, fluoroquinolones, doxycycline or chloramphenicol. Fluoroquinolones or doxycycline are options for post-exposure prophylaxis.

Duration: Gentamicin or fluoroquinolone: 10-14 days; doxycycline or chloramphenicol: 14-21 days

Treatment- Adults:

- Gentamicin 5 mg/kg IV/IM daily
- or**
- Ciprofloxacin 400 mg IV q12h (levofloxacin and gatifloxacin as alternatives)
- or**
- Doxycycline 100 mg IV q12h
- or**
- Chloramphenicol 15 mg/kg IV q6h

Treatment- Children:

- Gentamicin 2.5 mg/kg IV/IM q8h
- or**
- Ciprofloxacin 10-15 mg/kg IV q12 h (maximum 500mg/dose)
- or**
- Doxycycline IV (100mg maximum dose):
 - ▶ Age: ≤ 8 years then dose of 2.2 mg/kg q12h
 - ▶ Age of > 8 years and weight ≤ 45 kg, then dose of 2.2 mg/kg q12h
 - ▶ Age of > 8 years and weight >45 kg then dose of 100 mg q12h
- or**
- Chloramphenicol 15mg/kg IV q6h

Post-exposure Prophylaxis Duration: 14 days after last exposure

Post-exposure Prophylaxis- Adults:

- Ciprofloxacin 500 mg p.o. q12h
- or**
- Doxycycline 100 mg p.o q12h
- or**
- Levofloxacin 500 mg p.o. daily
- or**
- Gatifloxacin 400 mg p.o. daily

Post-exposure Prophylaxis- Children:

- Doxycycline 2.2 mg/kg p.o. q12h (max. dose 100 mg)
- or**
- Ciprofloxacin 10-15 mg/kg p.o. q12h (max. dose 500 mg)

For 24/7 assistance in the emergency management of an actual or suspected chemical terrorism exposure, contact a Certified Regional Poison Information Center at 1-800-222-1222.

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