NEW YORK CITY DEPARTMENT OF
HEALTH AND MENTAL HYGIENE
Thomas Farley, MD MPH
Commissioner

2013 DOHMH Advisory #25: Tularemia Advisory

July 25, 2013

Please share with your colleagues in Internal and Family Medicine, Pediatrics, Infectious Disease, Infection Control, Laboratory Medicine, Critical Care and Emergency Medicine:

- **Three wild rabbits collected from a Brooklyn park tested positive for *Francisella tularensis.***
- **No human cases have been identified.**
- **While human cases are rare, *F. tularensis* is found in NYC so consider tularemia in patients with compatible clinical presentation, especially if there is history of contact with wild rabbits or a tick bite.**

Dear Colleagues,

Three Eastern cottontail rabbits collected from Prospect Park in Brooklyn recently tested positive for *Francisella tularensis,* the bacteria that causes tularemia. At this time, there are no known human cases of tularemia in NYC. Tularemia is extremely rare in New York City, but it has been found in the past among wildlife and humans in all boroughs except for the Bronx. Since 1965, there have been 16 human cases in New York City, with the last occurring in Brooklyn in 2008.

Clinicians are reminded to consider tularemia in any patients presenting with illness consistent with tularemia, especially if there is a history of contact with wild rabbits or tick bite.

F. tularensis is maintained and amplified in nature in a cycle involving vertebrate hosts (most commonly rabbits and wild rodents) and arthropod vectors such as ticks. Tularemia is usually transmitted to humans by ticks, biting flies or by touching or eating an infected animal, but can also be transmitted by contact with contaminated water or soil, by a bite from an infected animal or by inhalation of contaminated particles. Tularemia is not spread directly from person to person. In the United States, approximately 100-200 cases are reported annually, with most occurring in the south central and western states.

Clinical Presentation

The clinical presentation of tularemia depends on the route of exposure. The onset of tularemia is usually abrupt, with fever, headache, chills and rigors, generalized body aches (often prominent in the low back), coryza, and sore throat. Nausea, vomiting, and diarrhea may occur. Sweats, fever, chills, progressive weakness, malaise, anorexia, and weight loss characterize the continuing illness.

- Glandular tularemia: The glandular form lacks an ulcer but has regional lymphadenopathy.
- Oropharyngeal and oculoglandular tularemia: These forms have signs localized to the oropharynx and eye, respectively.
- Pneumonic tularemia: The primary pneumonic form is rare but is the most severe, with an untreated mortality rate of up to 60%. Chest radiography may reveal various interstitial infiltrates with only minimal pulmonary symptoms and no obvious abnormalities detected during physical examination.

- Typhoidal tularemia: This rare and serious form causes high fever, exhaustion, vomiting, diarrhea, splenomegaly, hepatomegaly and pneumonia. There are no localizing signs and can be a diagnostic challenge.

All forms of tularemia can progress to secondary pleuropneumonia, meningitis, or sepsis. The case fatality rate is 1.4%.

Treatment

For adults and children, streptomycin is the drug of choice; however, gentamicin is an acceptable alternative. Tetracycline or chloramphenicol therapy is also acceptable.

Diagnostic Testing

The initial diagnostic workup of all suspected tularemia infections should include the following:

1. Notification of the laboratory of the clinical suspicion of tularemia *at the time of specimen submission* so that both the proper protection of laboratory workers can be instituted and specialized laboratory testing can be instituted.
2. Routine blood cultures, with bottles held for a minimum of 5 days.
3. Chest x-ray to assess for pulmonary infiltrates or consolidation.
4. Sputum (if pneumonic) and/or lymph node aspirate (if glandular) for Gram stain and culture.
5. Swab or scraping of lesion or pus from abscess or ulcer.
6. If signs of meningitis, send CSF for Gram stain and culture.

Laboratory Testing

Isolation of *F. tularensis* requires specialized microbiologic testing. This organism ranks second in the United States as a cause of laboratory-acquired infections. *F. tularensis* is highly virulent and all work with this organism must be performed within a biological safety cabinet.

Laboratories should be notified at the time of specimen submission of the clinical suspicion of tularemia so that proper protection of laboratory workers can be instituted. All isolates suspicious for *F. tularensis* should be referred to the New York City Department of Health and Mental Hygiene's Public Health Laboratory by calling 212-447-6753.

Resources

Additional information on the clinical management of tularemia, including treatment guidance, is available on the CDC website at http://www.bt.cdc.gov/agent/tularemia/ or the CDC Tickborne Diseases Reference Manual for Health Care Providers at http://www.cdc.gov/lyme/resources/TickborneDiseases.pdf

Reporting Cases of Tularemia

Healthcare providers should immediately report all suspected or diagnosed cases of tularemia to the DOHMH Bureau of Communicable Disease during business hours: 347-396-2600 and after hours, contact the Poison Control Center at 212-764-7667. Prompt reporting allows for early identification and control of known sources of infection. As always, the NYC DOHMH appreciates the ongoing collaboration with the medical and laboratory community in responding to infectious diseases issues in New York City.

Sincerely,

Marcelle Layton, MD
Marcelle Layton, MD
Assistant Commissioner
Bureau of Communicable Disease

Sally Slavinski, DVM, MPH
Sally Slavinski, DVM, MPH
Zoonotic, Influenza and Vector-borne Disease Unit
Bureau of Communicable Disease