

LISTERIOSIS

REPORTING INFORMATION

- Class A(2)
- Report by end of next business day
- [Confidential Case Report Card](#) (3812.11 rev. 12/81), [lab report](#) (3833.11), or telephone
- Complete the [Listeria Case Report](#) and submit to ODH, Bureau of Infectious Disease Control, 246 N. High Street, PO Box 118, Columbus, OH 43266-0118.
- The [Enteric Case Report](#) might be useful in follow-up of cases. Do not send this report to ODH; it is for local health department use only.
- If this is a case of listeria meningitis or bacteremia, the [National Bacterial Meningitis and Bacteremia Case Report Form](#) (CDC 52.15 rev. 10-91) should be sent by the local health department to ODH, Infectious Disease Investigation, 246 N. High Street, PO Box 118, Columbus, OH 43266-0118.

AGENT

The bacterium, *Listeria monocytogenes*, is a gram-positive rod; the major serotypes that cause infection are serotypes 1/2a, 1/2b, and 4b. It can grow at temperatures as low as 3°C and reproduce in refrigerated foods. The infectious dose is unknown, but might be $<10^3$ organisms in susceptible persons.

CASE DEFINITION

Clinical description

Infection caused by *Listeria monocytogenes*, which may produce any of several clinical syndromes, including stillbirth, listeriosis of the newborn, meningitis, bacteremia, or localized infections

Laboratory criteria for diagnosis

Isolation of *L. monocytogenes* from a normally sterile site (e.g., blood or cerebrospinal fluid or, less commonly, joint, pleural, or pericardial fluid)

Case classification

Confirmed: a clinically compatible case that is laboratory confirmed

SIGNS AND SYMPTOMS

There are two main clinical presentations, accounting for 97% of the cases:

1. Septicemia only - an acute, mild to severe febrile illness, sometimes with influenza-like and/or gastrointestinal symptoms.
2. Acute meningoencephalitis - sudden onset of fever with intense headache, nausea, vomiting, and signs of meningeal irritation. Delirium and coma may result.

Infections can be classified into five general categories:

1. Infection during pregnancy - might be asymptomatic, but is usually a mild, febrile illness (bacteremia) that can cause premature labor with a resultant stillbirth or infected baby. The mother usually survives.
2. Granulomatosis infantiseptica - an early grave illness of the neonate due to *in utero* transmission. Septicemia results in abscesses/granulomas in multiple organs. There might also be meningoencephalitis.
3. Sepsis - moderate to severe illness of neonates (>3 days after birth) or (usually) immunosuppressed adults.
4. Meningoencephalitis - subacute to severe illness of either neonates (>3 days after birth) or (usually) immunosuppressed adults.
5. Focal infection - focal or localized lesions in adult or child resulting from direct contact or bacteremia.

DIAGNOSIS

Listeria can be cultured on routinely used media from blood, cerebrospinal fluid, meconium, gastric washings, placenta, and other infected tissues. Special techniques (e.g., cold enhancement) may be needed to recover the organism from stool and other sites with mixed flora. Laboratories should send all

Listeria isolates to the ODH Laboratory for serotyping and PFGE analysis. Serologic tests are unreliable.

EPIDEMIOLOGY

Source

Listeria are found widely spread in the environment and in animals. They have been isolated from soil, dust, animal feed, water, sewage, domestic and wild mammalian and avian species, fish, crustaceans, and asymptomatic humans. Foods associated with common source outbreaks include raw and contaminated pasteurized milk, soft cheeses, and cole slaw. Uncooked hot dogs, ready-to-eat meats, undercooked chicken, and unwashed vegetables have also been associated with listeriosis.

Occurrence

The incidence of listeriosis is unknown. It is an uncommon infection and is typically sporadic although common source foodborne outbreaks have occurred in recent years. Individuals at greatest risk are neonates, the elderly, pregnant women, and immunocompromised persons. About 40% of clinical cases occur within the first three weeks of life; in adults infection occurs mainly after age 40 or among those with underlying disease. *L. monocytogenes* is the cause of up to 10% of community-acquired meningitis. Inapparent infections occur at all ages, although they are of consequence only during pregnancy. Incidence in humans is higher in the summer.

Mode of Transmission

Early onset neonatal infections (onset \leq 3 days after birth) arise from transplacental or ascending intrauterine infection. Late onset neonatal infections (onset $>$ 3 days after birth) can be acquired during passage through the birth canal. Ingestion of contaminated foods, genital contact, and inhalation are possible routes of transmission. Skin infections can occur from direct contact with infected animals or soil contaminated with infected animal feces. In most human cases, the portal of entry is not apparent. The organism can be shed in human stool for several months.

Period of Communicability

Period of communicability is unknown. Asymptomatic fecal and vaginal carriage occurs in humans.

Incubation Period

Estimated to be 3 weeks (mean), ranging from 3 to 70 days. The fetus is usually infected within several days after maternal disease.

PUBLIC HEALTH MANAGEMENT

Case

No quarantine or strict isolation is necessary. Drainage/secretion precautions may be considered for heavily infected infants. Optimal antimicrobial therapy is uncertain; however, the use of ampicillin plus an aminoglycoside has been recommended due to its effectiveness in animals.

Contact

It appears that many people have contact with and might carry the organism, but few develop symptomatic infections. Precautions for those contacts who are immunocompromised might be indicated as it appears that the persons most affected by the disease fall into this category.

Prevention and Control

There is no immunization available and investigation of contacts and the source of infection is of no practical value, unless an outbreak is suspected. Pregnant women and other high-risk individuals, such as immunocompromised persons and the elderly, should consider the following to minimize their risk of acquiring listeriosis:

- avoid contact with infective materials such as aborted fetuses of farm animals
- avoid contact with known infected persons
- avoid soft cheeses such as feta, Brie, Camembert, blue-veined cheeses, and Mexican-style cheeses
- cook until steaming hot left-over foods or ready-to-eat foods such as hot dogs, lunch meats, and

cold cuts.

- avoid food from deli counters
- avoid raw (unpasteurized) milk or foods made with raw milk