State of Montana *Health Alert Network*

DPHHS HAN UPDATE

MONTANA
Department of Public Health & Human Services

Cover Sheet

DATE: September 14, 2011

SUBJECT: Listeriosis in Montana

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State of Montana *Health Alert Network*

DPHHS HAN

MONTANA Department of Public Health & Human Services

Information Sheet

Date: September 14, 2011

Subject: Montana Listerosis Case confirmed as part of multistate outbreak associated with cantaloupe consumption

Information:

Montana DPHHS was notified that a case of Listeriosis, diagnosed in a Yellowstone resident, is part of a multi-state listeriosis outbreak associated with consuming cantaloupe from the Colorado Rocky Ford region.

Further testing is underway for a second case, in a Gallatin resident, to determine if it is part of the outbreak.

Both cases are in elderly adults. Both cases were hospitalized. Onset dates for the 2 cases are: August 24 and September 6. Between 2006 and 2010, 0 to 1 cases per year of listeriosis have been reported in Montana.

At least 17 cases in 6 states are identified with the outbreak. Most cases occurred in Colorado. Current information on the investigation is available at:
http://www.cdc.gov/nczved/divisions/dfbmd/diseases/listeriosis/091211.html

Actions:

- Immediately report all suspect and confirmed cases of listeriosis to your local County or Tribal Health Department.
- Clinical specimens or isolates should be sent to the Montana Public Health Laboratory for confirmatory testing and augmented testing, such as PFGE, for cases of public health importance. Call the MPHL at 800-821-7284 for questions about specimens.

For questions, contact the Health Department in your jurisdiction, or call 406-444-0273.

Food

BBB - Listeria monocytogenes

Bad Bug Book:
Foodborne Pathogenic Microorganisms and Natural Toxins Handbook
Listeria monocytogenes

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1. Name of the Organism:

Listeria monocytogenes [1]

This is a Gram-positive bacterium [2], motile by means of flagella. Some studies suggest that 1-10% of humans may be intestinal carriers of *L. monocytogenes*. It has been found in at least 37 mammalian species, both domestic and feral, as well as at least 17 species of birds and possibly some species of fish and shellfish. It can be isolated from soil, silage, and other environmental sources. *L. monocytogenes* is quite hardy and resists the deleterious effects of freezing, drying, and heat remarkably well for a bacterium that does not form spores. Most *L. monocytogenes* are pathogenic to some degree.

2. Name of Acute Disease:

Listeriosis is the name of the general group of disorders caused by *L. monocytogenes*.

3. Nature of Disease:

Listeriosis is clinically defined when the organism is isolated from blood, cerebrospinal fluid, or an otherwise normally sterile site (e.g. placenta, fetus).

The manifestations of listeriosis include septicemia, meningitis (or meningoencephalitis), encephalitis, and intrauterine or cervical infections in pregnant women, which may result in spontaneous abortion (2nd/3rd trimester) or stillbirth. The onset of the aforementioned disorders is usually preceded by influenza-like symptoms including persistent fever. It was reported that gastrointestinal symptoms such as nausea, vomiting, and diarrhea may precede more serious forms of listeriosis or may be the only symptoms expressed. Gastrointestinal symptoms were epidemiologically associated with use of antacids [3] or cimetidine. [4] The onset time to serious forms of listeriosis is unknown but may range from a few days to three weeks. The onset time to gastrointestinal symptoms is unknown but is probably greater than 12 hours.

The infective dose of *L. monocytogenes* is unknown but is believed to vary with the strain and susceptibility of the victim. From cases contracted through raw or supposedly pasteurized milk, it is safe to assume that in susceptible persons, fewer than 1,000 total organisms may cause disease. *L. monocytogenes* may invade the gastrointestinal epithelium. Once the bacterium enters the host's monocytes, [5] macrophages, or polymorphonuclear leukocytes, [6] it is bloodborne (septicemic) and can grow. Its presence intracellularly in phagocytic cells also permits access to the brain and probably transplacental migration to the fetus in pregnant women. The pathogenesis of *L. monocytogenes* centers on its ability to survive and multiply in phagocytic host cells.

4. Diagnosis of Human Illness:

Listeriosis can only be positively diagnosed by culturing the organism from blood, cerebrospinal fluid, or stool (although the latter is difficult and of limited value).

5. Associated Foods:

L. monocytogenes has been associated with such foods as raw milk, supposedly pasteurized fluid milk, cheeses (particularly soft-ripened varieties), ice cream, raw vegetables, fermented raw-meat sausages, raw and cooked poultry, raw meats (all types), and raw and smoked fish. Its ability to grow at temperatures as low as 3°C permits multiplication in refrigerated foods.

6. Frequency of the Disease:

The 1987 incidence data prospectively collected by CDC suggests that there are at least 1600 cases of listeriosis with 415 deaths per year in the U.S. The vast majority of cases are sporadic, making epidemiological links to food very difficult.

7. Complications:

Most healthy persons probably show no symptoms. The "complications" are the usual clinical expressions of the disease.

When listeric meningitis occurs, the overall mortality may be as high as 70%; from septicemia 50%, from perinatal/neonatal infections greater than 80%. In infections during pregnancy, the mother usually survives. Successful treatment with parenteral penicillin [7] or ampicillin [8] has been reported. Trimethoprim-sulfamethoxazole [9] has been shown effective in patients allergic to penicillin.

8. Target Populations:

The main target populations for listeriosis are:

- pregnant women/fetus - perinatal and neonatal infections;
- persons immunocompromised by corticosteroids, anticancer drugs, graft suppression therapy, AIDS; [10]
- cancer patients - leukemic patients particularly;
- less frequently reported - diabetic, cirrhotic, asthmatic, and ulcerative colitis [11] patients;

- the elderly;
- normal people--some reports suggest that normal, healthy people are at risk, although antacids or cimetidine may predispose. A listerosis outbreak in Switzerland involving cheese suggested that healthy uncompromised individuals could develop the disease, particularly if the foodstuff was heavily contaminated with the organism.

9. Food Analysis:

The methods for analysis of food are complex and time consuming. The present FDA method, revised in September, 1990, requires 24 and 48 hours of enrichment, followed by a variety of other tests. Total time to identification is from 5 to 7 days, but the announcement of specific nonradiolabled DNA probes should soon allow a simpler and faster confirmation of suspect isolates.

Recombinant DNA technology may even permit 2-3 day positive analysis in the future. Currently, FDA is collaborating in adapting its methodology to quantitate very low numbers of the organisms in foods.

10. Selected Outbreaks:

For more information on recent outbreaks see the Morbidity and Mortality Weekly Reports[12] from CDC.

11. Education:

The FDA health alert for Hispanic pregnant women[13] concerns the risk of listeriosis from soft cheeses. The CDC provides similar information in Spanish.[14]

FSIS also has updated consumer information on Listeria monocytogenes[15].

The CDC produces an information brochure on preventing Listeriosis[16].

12. Other Resources:

A Loci index for genome *Listeria monocytogenes*[17] is available from GenBank.

Links on this page:

1. /Food/FoodSafety/FoodborneIllness/FoodborneIllnessFoodbornePathogensNaturalToxins/BadBugBook/ucm074156.htm?Listeria
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11. /Food/FoodSafety/FoodborneIllness/FoodborneIllnessFoodbornePathogensNaturalToxins/BadBugBook/ucm074156.htm?colitis=ulcerative
12. http://www.cdc.gov/search.do?action=search&direction=desc&queryText=listeria&sort=date&subset=mmwr
13. /Food/ResourcesForYou/HealthEducators/ucm062993.htm
14. http://www.cdc.gov/ncidod/dbmd/diseaseinfo/listeriosis_g_span.htm
15. http://www.fsis.usda.gov/fact_sheets/listeria_monocytogenes/index.asp
16. http://www.cdc.gov/ncidod/dbmd/diseaseinfo/listeriosis_g.htm
17. http://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?name=Listeria%20monocytogenes

NEWS

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MONTANA Department of Public Health & Human Services

Department of Public Health and Human Services *www.dphhs.mt.gov*

FOR IMMEDIATE RELEASE
September 14, 2011
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Montana investigating cases of listeria linked to cantaloupe

Department of the Public Health and Human Services officials have identified two cases of listeriosis in Montana residents who reside in two different Montana counties, Gallatin and Yellowstone.

Local and state health officials in Montana are investigating both cases for connections to a cluster of listeriosis cases in five other states that is possibly tied to consumption of cantaloupe. One case, in Yellowstone County, as been definitively linked to the outbreak and the other is awaiting further testing.

While the investigation is continuing to identify the exact source of the illness, the Centers for Disease Control (CDC) is recommending that persons at high risk for listeriosis, including older adults, persons with weakened immune systems, and pregnant women, do not eat cantaloupes coming from the Rocky Ford region of Colorado. At present, at least 17 ill persons in six states have been linked to the outbreak.

At this time, DPHHS is working with the U.S. Food and Drug Administration to determine distribution of the fruit in Montana. Until more is known regarding Montana's cases and the distribution of the product, health officials are recommending not consuming cantaloupe from the Rocky Ford region of Colorado.

"Contaminated cantaloupes may still be in grocery stores and in consumers' homes," said DPHHS Director Anna Whiting Sorrell. "There are simple steps Montanans can take to reduce the risk of becoming ill."

Listeriosis, a serious bacterial infection usually caused by eating contaminated food is an important public health problem in the United States. The disease primarily affects older adults, pregnant women, newborns, and adults with weakened immune systems.

However, rarely, persons without these risk factors can also be affected. Symptoms of listeriosis include fever and muscle aches, and often include diarrhea, headache, stiff neck, confusion and convulsions. Listeriosis also can cause miscarriages and stillbirths. Antibiotics given promptly

can cure the illness and prevent infection of an unborn child. Even with prompt treatment, some Listeria infections result in death.

Listeriosis is usually associated with undercooked deli meats, refrigerated smoked seafood, and soft cheeses. The current multi-state outbreak appears to be related to consumption of cantaloupes produced in Colorado.

Advice from DPHHS includes:

- Persons at high risk for listeriosis, including older adults, persons with weakened immune systems, and pregnant women, should not eat cantaloupes coming from the Rocky Ford region of Colorado.
- Consumers who have cantaloupes in their homes can check the label or inquire at the store where they purchased it to determine if the fruit coming from the Rocky Ford region of Colorado.
- Persons who think they might have become ill from eating possibly contaminated cantaloupes should consult their doctor immediately.
- Cantaloupes coming from the Rocky Ford region should be disposed of in a closed plastic bag placed in a sealed trash can. This will prevent people or animals from eating them.
- Consumers and food preparers should wash their hands before and after handling any whole melon, such as cantaloupe, watermelon, or honeydew and wash and dry them with a clean cloth or paper towel before cutting.
- Cut melon should be promptly consumed or refrigerated at or less than 40 degrees F and discarded if left at room temperature for more than 4 hours.

As additional information on this outbreak becomes available local and state public health officials will issue updates as needed.

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