

Clinical Description:

Yersiniosis is an acute bacterial enteric disease caused by either the bacteria *Yersinia enterocolitica* or *Yersinia pseudotuberculosis*, and having a variety of presentations. This is a relatively infrequent cause of diarrhea and abdominal pain.

For more information on food safety, visit the [Canadian Food Inspection Agency Web site](http://www.inspection.gc.ca) at www.inspection.gc.ca.

Source of Infection and Transmission:

- ◆ Fecal-oral transmission through consumption of contaminated food or water and through contact with infected people and animals.
- ◆ Wild and domestic animals including household pets (sick puppies and kittens) and swine are the principle reservoirs of *Y. enterocolitica*.
- ◆ *Y. pseudotuberculosis* is a zoonotic disease of many types of wild and domestic birds and animals, especially among rodents and other small mammals, including turkeys, ducks, geese, pigeons, pheasants, and canaries. In the North, it has been diagnosed in free-ranging muskoxen on Bank's Island.
- ◆ Humans are incidental hosts of *Yersinia* infection.
- ◆ *Y. enterocolitica* infection is most often associated with undercooked meat and pork products.
- ◆ Drinking contaminated unpasteurised milk or untreated water can also transmit the infection.
- ◆ Transfusion with blood from donors who were asymptomatic or direct fecal- oral, person to person transmission is also possible.
- ◆ Human carriage 2-6 weeks, or longer if untreated, up to 6 months. Long term carriers are possible.

Incubation Period:

- ◆ Usually 3-7 days, can range from 1-14 days.

Symptoms:

- ◆ *Y. enterocolitica* is most often linked with gastroenterocolitis and can cause acute watery diarrhea, with leucocytes, blood and mucous in the stool, fever, headache, anorexia and vomiting.
- ◆ *Y. pseudotuberculosis* presents with fever and abdominal pain.
- ◆ In some cases, people will get a skin rash or joint pain.
- ◆ *Y. enterocolitica* and *Y. pseudotuberculosis* cause acute mesenteric lymphadenitis, clinically characterized by an appendicitis-like syndrome.

Major Complications:

- ◆ Infection can be complicated by erythema nodosum, postinfectious polyarthrititis, exudative pharyngitis, septicemia and systemic infection.
- ◆ There may be perforation of the ileum and rectal bleeding.
- ◆ Focal infections, abscess formation, and bacteremia may occur in individuals with predisposing conditions.
- ◆ In cases related to blood transfusion, fever and rigors may occur within 30 minutes of the transfusion and may rapidly progress to hypotension, disseminated intravascular coagulation, renal failure, and death.
- ◆ Infection with *Y. pseudotuberculosis* has a higher case fatality rate in immunocompromised individuals.
- ◆ The most susceptible populations for disease and possible complications are the very young, the debilitated, the very old, and immunocompromised individuals.
- ◆ The majority of cases of enterocolitis syndrome occur in one to four year olds. The infection is generally more severe in children.
- ◆ Mesenteric adenitis and terminal ileitis are more common in older children and young adults. Five to 20 year olds account for approximately 75% of *Y. pseudotuberculosis*.

Diagnosis and Treatment:

- ◆ Stool cultures are generally positive during the first two weeks of illness. It is important that laboratories be notified that *Yersinia* infection is suspected as identification from stool specimens requires specific techniques.
- ◆ The infection is usually self-limited. Most mild cases do not need treatment.
- ◆ *Yersinia* is usually resistant to penicillin and its derivatives, however it is susceptible to aminoglycosides, cefotaxime and other cephalosporins. Newer quinolones such as ciprofloxacin are also effective. Tetracyclines can be given to adults and children older than 9 years of age. These antibiotics can help reduce the time of excretion.
- ◆ Mild – moderate yersiniosis is treated with fluid replacement and bismuth sulfate subsalicylate and/or antimotility agents.

Severe yersiniosis requires antibiotic treatment. Ciprofloxacin or TMP/SMX are recommended. See current edition of “*Bugs and Drugs*” for dosage and duration

Public Health Measures:

- Enteric precautions for patients in hospitals.
- Remove those with diarrhea from food handling, patient care and occupations involving care of young children.

Reporting and Follow-Up:

- ◆ Any suspected cases are to be reported to the Office of the Chief Medical Health Officer (OCMHO).
- ◆ Consult with Environmental Health Officer.
- ◆ Complete *Communicable Disease Report Form*.

Public Education: (Key Messages)

- ◆ Avoid eating raw or undercooked pork.
- ◆ Consume only pasteurized milk or milk products.
- ◆ Wash hands with soap and water before eating and preparing food, after contact with animals and after handling raw meat.
- ◆ Use separate cutting boards for meat and other foods. Carefully clean all cutting boards, counter-tops, and utensils with soap and hot water after preparing raw meat.
- ◆ Dispose of animal feces in a sanitary manner.

Epidemiology:

1989 – 2005

Two cases in 1998 and two cases in 2002 reported in the NWT, usually associated with ingestion of undercooked pork.