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## Yersiniosis - How Much Are We Missing?

July 28, a five-month-old girl was admitted to Humana Hospital, Anchorage after one week of fever, lethargy, irritability, and projectile diarrhea. Temperature was 39.6°C. Stools were copious and bloody. White blood cell count was 14,000/cc with toxic granulation. The infant was treated initially with intravenous fluids, then with Isomil. Bloody stools persisted for four days. After the recovery of Yersinia enterocolitica from the infant's stools (confirmed by the Alaska Division of Laboratories), she was treated with intravenous gentamycin and gradually improved.

The infant, bottle fed since birth, had been well prior to this illness. The only "new" food which the mother could recall was a frozen commercial ice cream pie eaten by the infant two days before onset of illness. Other family members, and the family's pet dog had not suffered recent diarrhea. There were no secondary cases.

This case is the first reported in Alaska since 1981 when a Homer resident developed Yersiniosis apparently related to consumption of contaminated tofu (Japanese bean curd) from the state of Washington.

Yersinia enterocolitica is a gram-negative, rod-shaped, aerobic bacterium. It produces a lipopolysaccharide endotoxin similar to those of other gram-negative bacilli. There is also evidence that it produces a heat-stable enterotoxin. Two-thirds of all reported U.S. cases present with enterocolitis characterized by diarrhea and abdominal pain lasting one to three weeks. Fever commonly occurs during the first week of illness. The stools may be bloody. The diarrhea uncommonly recurs for several months. Enterocolitis is seen predominantly among children under 5 years of age. Acute mesenteric lymphadenitis, presenting with fever, right lower quadrant pain and elevated white blood cell counts may be clinically indistinguishable from acute appendicitis. (The appendix is histologically normal or only mildly inflamed in most cases). This syndrome occurs more commonly in older children and adolescents. While septicemia is uncommon, it usually occurs in debilitated patients, but normal adults and infants may also be affected. The case fatality rate for Yersinia septicemia is over 30%. An acute arthritis, following Yersinia enterocolitica infection by a few days to a month, has been observed. The arthritis is not symmetrical and usually involves 2 to 4 joints. The acute joint inflammation usually resolves within a year, but chronic sequelae (ankylosing spondylitis, sacroilitis, localized arthralgia) are observed in most patients.

Yersinia enterocolitica has been isolated from wild and domestic animals, lakes and streams, raw cow's milk, goat's milk, and other foods. Humans are usually infected by ingestion. Most cases are sporadic, and the source not identified, but outbreaks may occur. Waterborne transmission has been strongly suggested in an outbreak at a Montana resort. Chocolate milk appeared to be the source of infection for an outbreak involving over 200 children in New York. Person-to-person spread has been implicated within families and in the hospital setting. Excretion of Yersinia enterocolitica in the feces has been observed for as long as three months after onset of diarrhea.

The diagnosis may be made by culture of stool, blood, mesenteric lymph node or other appropriate specimens. Yersinia enterocolitica grows well on blood, heart infusion, MacConkey and SS agars at room temperature and at 37°C. It also grows in buffered saline at 4°C. Special care is needed though, because it is often overgrown by other organisms in fecal cultures and because it may be mistaken for Proteus species.

Enterocolitis and mesenteric adenitis are usually self-limited. The need for antibiotic therapy of these conditions is unclear. The drug of choice for septicemia and focal infections has not been established, but gentamycin or chloramphenicol should be useful. We speculate that Yersinia may be much more common than has been reported. A study in Montreal found Yersinia enterocolitica in 2.8% of children presenting to hospital with acute gastroenteritis. It was second only to Salmonella (5.1%) and Campylobacter (4.3%) among the bacterial causes of diarrhea.

We do not know whether Yersiniosis truly occurs less frequently in Alaska than in Montreal or whether it occurs here without being identified. We encourage physicians to help us answer this question by specifically culturing patients with appropriate symptoms and by reporting diagnosed cases through the Rapid Telephonic Reporting System.

(Reported by Linda Ekman, M.D. Reprinted from the Oregon Communicable Disease Summary, Vol. 31, No. 6, Feb. 13, 1982).