



Bulletin No. 11

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Typhoid Fever - Kobuk River Valley

In late December, 1982, the Epidemiology Office was informed by Chris Swartz, RN, Infection Control Nurse, Alaska Native Medical Center that an inpatient was passing copious amounts of *Salmonella typhi* in his urine. This patient was a cousin of a 32-year-old man who died at ANMC six months before with the post-mortem diagnosis of typhoid fever. Both patients were residents of communities in the Kobuk River Valley east of Kotzebue. The patient from whose urine *Salmonella typhi* was identified is a 62-year-old trapper who lives alone. He claimed never to have had symptoms of typhoid fever. Long-standing renal calyceal damage was thought to represent a focus for continued carriage of *Salmonella typhi*. This patient was treated with long-term trimethoprim-sulphamethoxazole; so far, urine has been negative on follow-up.

The 32-year-old cousin of this patient had been admitted to Alaska Native Medical Center in April-May 1982. Initial symptoms included lower gastrointestinal bleeding, and daily fever spikes to 101°F. Blood and stool cultures did not grow *Salmonella*. Rose spots were not observed. About four weeks after onset of illness, the patient developed fever to 104°F., severe abdominal pain, and died with fulminant hepatitis. Massive liver necrosis was demonstrated at autopsy as were Peyer's patches and generalized lymphadenopathy. The post-mortem diagnosis was typhoid fever, without bacteriologic confirmation.

In association with Martha Stewart, PHN, Maniilaq Association, and Nellie Griest, and May Bernhart, health aides from Shungnak and Kobuk, an epidemiologist interviewed friends and close associates of these two patients and secured samples of their stool for bacteriologic culture. Review of medical records revealed four individuals who between April 1981-October 1982 suffered clinical illness characterized by fever, but without specific diagnosis. These four were considered to have been possible cases of typhoid fever, and each had some connection with either the 32-year-old or 62-year-old identified patients. A program of surveillance was initiated in Kobuk River communities and in Kotzebue to detect expeditiously possible future cases of typhoid fever so as to offer the maximum chance of cure.

Typhoid fever is an illness characterized by sustained fever, headache, malaise, anorexia, and relative bradycardia, along with enlargement of spleen, and lymphoid tissue, and constipation more commonly than diarrhea. Many mild and atypical infections occur. Complications include ulceration of Payer's patches of the large bowel producing intestinal hemorrhage or perforation, and hepatitis. The usual fatality rate was 10% in the era before antibiotic treatment, and with antibiotics is considered to be 1% or less. Infection can be transmitted by acute cases, and by the 3-5% of those acute cases who become chronic carriers of *Salmonella typhi*. The incidence of cases of typhoid fever, and the prevalence of *Salmonella typhi* carriers have both declined considerably in Alaska in recent years. The last clinical cases of typhoid fever were reported in 1973.

Scombroid Fish Poisoning Alert

In Bulletin No. 17 (Week ending September 10, 1982), we reported on two outbreaks of hives, nausea, and tachycardia occurring 30-60 minutes after eating raw fish. While this syndrome, known as scombroid fish poisoning, has been well documented in southern waters, these were the first such outbreaks reported after the consumption of Alaskan fish (in this case raw cod, flounder, and salmon). Since the publication of Bulletin Number 17, we have heard of similar illness which occurred last summer in patients who ate raw fish from Prince William Sound. In order that illness related to scombroid fish poisoning can be characterized, we ask that physicians seeing patients who develop symptoms of histamine release after eating raw fish contact the Epidemiology Office at 561-4406 and urge their patients to refrigerate samples of the fish eaten until samples of the fish for scombrotoxin can be arranged.