



Bulletin No. 11

April 27, 1995

## Paralytic Shellfish Poisoning Strikes Again

**Outbreak No. 1:** On February 27, 1995 a 62-year-old long-time resident of Kodiak was evaluated at the Kodiak Island Hospital emergency room with a complaint of numbness of his face and cheeks. An alert physician obtained a history that the patient consumed clams 10-15 minutes prior to the onset of numbness. Paralytic shellfish poisoning (PSP) was suspected. The numbness lasted for approximately 30 minutes and spontaneously resolved. The patient did not complain of gastrointestinal upset, floating sensation, weakness, or difficulty breathing. He had harvested butter clams from Crooked Island on February 25. Samples of leftover clams were obtained and sent to the Department of Environmental Conservation (DEC) Environmental Health Laboratory in Palmer. Testing for PSP toxin found levels ranging from 137 micrograms ( $\mu\text{g}$ ) per 100 grams of tissue (in a cooked sample) to 265  $\mu\text{g}/100$  grams (in a raw sample).

**Outbreak No. 2:** On April 3, at 5:40 AM, two Perryville residents saw the Community Health Aide (CHA) with symptoms of numbness of the lips, hands, and feet. The CHA suspected PSP and treated the patients with syrup of ipecac, charcoal, and milk of magnesia. The prior evening, the patients had eaten a meal of razor clams which had been collected from Humpback Bay. Epidemiologic investigation identified five other Perryville residents with symptoms of PSP. Onset of symptoms (for four cases for whom it could be calculated) ranged from 15 minutes to 4 hours after consumption; three persons had fallen asleep after eating clams and awoke with symptoms. Symptoms included perioral numbness (100%), extremity paresthesias (43%), weakness (28%), nausea (14%), and dysphagia (14%). There were no hospitalizations and all persons recovered within 24 hours. Three of the seven persons reported having similar symptoms in the past after eating clams. PSP toxin was found in both the razor clams from the batch eaten by the first two persons (544  $\mu\text{g}/100$  gm) and in razor clams subsequently collected from Humpback Bay by an Office of Environmental Health sanitarian (979  $\mu\text{g}/100$  gms). Butter clams collected from the same beach at the same time were also positive for toxin (141  $\mu\text{g}/100$  gm) but were not associated with illness. Local and statewide newsmedia carried a DEC announcement warning residents of the dangers of PSP.

**Discussion and Recommendations:** From 1973 to 1994, 71 outbreaks of PSP were reported to the Section of Epidemiology. Despite the presence of edible shellfish along the entire Alaska coast, all outbreaks occurred south of latitude 60 degrees north. Although outbreaks have been reported during all months except November and December, 77% of the outbreaks occurred during May (n=25), June (n=22), and July (n=8). Outbreaks were caused by eating butter clams (49%), mussels (25%), cockles (11%), little neck and razor clams (4%), and "steamers" (6%). Overall, of 141 persons who became ill, 34 required emergency evacuation by airplane, 81 were seen at a hospital, and 42 were admitted. Two persons died and eight received mechanical ventilation. The most common symptom of those affected was paresthesias involving either the perioral region or the extremities. Other common symptoms included nausea, vomiting, weakness, ataxia, shortness of breath, dizziness, and a floating sensation.

Because DEC routinely tests samples of commercially harvested shellfish for PSP toxin **before** each lot is distributed, the risk of acquiring PSP after consuming Alaska shellfish purchased from a restaurant or market is insignificant. However, since shellfish from sites used by recreational and subsistence shellfish gatherers are not routinely tested, **the Division of Public Health recommends that persons not eat shellfish collected from non-commercial Alaska beaches.** There are no simple and reliable tests to determine if a particular beach is safe.

Specimen collection is a critical part of every suspected PSP outbreak. In addition to determining toxin levels from shellfish, recent scientific advances have made it possible to determine toxin levels from human specimens. Consequently, the following specimens should be collected:

- Blood (one full red top tube) from **all** persons who ate shellfish at the implicated meal **regardless** of whether they became ill or not. These persons likely were exposed to PSP toxin and may have detectable amounts in their serum.
- Urine from all persons who ate shellfish at the implicated meal **regardless** of whether they became ill or not.
- Shellfish leftover from the implicated meal.

Serum and urine specimens should be collected **immediately** upon presentation to a health care center; the longer the delay, the less likely toxin will be detected. All specimens should be stored in a refrigerator. The Section of Epidemiology will coordinate transport of and possible collection of additional specimens. **All suspected cases of PSP should be immediately reported to the Section of Epidemiology (1-907-561-4406) during business hours; 1-800-478-0084 after hours).**

Reference: Gessner BG, Middaugh JPM. Paralytic shellfish poisoning in Alaska: a 20-year retrospective analysis. *Am J Epidemiol* 1995;141:766-70.

(Cases reported by Rob Labarre, MD, Kodiak and Sean Stitham, MD, Dillingham. Thanks to Mike Ostasz, Everett Stone, DEC and John Smart, Bristol Bay Health Corporation for assistance with specimen collection and shipping. Contributed by Michael Beller, MD, MPH and Sue Anne Jenkerson, RNC, MSN, FNC, Section of Epidemiology and Brad Gessner, MD, Section of Family Health.)