Botulism

Botulism is a Class A Disease. It must be reported to the state within 24 hours by calling the phone number listed on the website.

Botulism is caused by toxins produced by *Clostridium botulinum*, a spore-forming bacteria. It is spread via airborne spores that mature and produce their toxins in anaerobic environments. Botulism is not transmissible from person-to-person.

Botulism infections fall into the following three categories:

Foodborne botulism is acquired by the ingestion of food in which toxin has been formed, predominantly after inadequate heating during preservation and without subsequent adequate cooking. Foods associated with botulism are mostly home-canned foods (65% of cases prior to 1960), and commercially processed foods (7% of pre-1960 cases) because these foods provide the anaerobic environment necessary for maturation of the spores and subsequent production of toxins.

The incubation period for foodborne botulism is 12 to 48 hours; initial symptoms may include blurred or double vision, dysphagia, dry mouth, vomiting and constipation, or diarrhea. The symptoms may extend to symmetrical flaccid paralysis. The case-fatality rate in the U.S. is 5% to 10%.

Prevention of foodborne botulism is best accomplished by proper preparation, handling and heating of canned or preserved foods. Commercial cans or home canned products with dents or bulging lids should not be opened. Foods exhibiting abnormal odors should not be consumed.

All cases of foodborne botulism are treated as public health emergencies because the responsible food may still be available for consumption.

Infant botulism is often attributed to the ingestion of fresh honey that is contaminated with spores. However, other sources of botulism in infants, such as exposure to soil contamination, have emerged since feeding honey to infants has been discouraged. (Honey should never be fed to infants younger than one year of age.) The incubation period for infant botulism is three to 30 days and illness typically begins with constipation, followed by lethargy, poor feeding, loss of head control and generalized weakness, difficulty swallowing and sometimes, respiratory insufficiency and arrest. The case-fatality rate of hospitalized cases in the U.S. is less than 1%.

Wound botulism results when the spores contaminate a wound in which anaerobic conditions develop. Wound botulism is often associated with illegal injectable drug use. The incubation period is four to 14 days and symptoms are similar to those of foodborne botulism. Prevention is best accomplished by properly seeking medical care for infected wounds and by not using injectable illicit drugs.

Iatrogenic botulism results from overuse or incorrect use of botulinum toxin injected for cosmetic purposes, or therapeutic purposes. The incubation period is unknown, however recorded cases report onset of symptoms hours to days after exposure. Symptoms range from generalizes muscle weakness, dropping of the eyes, difficulty swallowing, double vision, and dysphonia. To prevent iatrogenic botulism, ensure you receive cosmetic or medical procedures involving botulinum toxin from a licensed health care provider. Furthermore, ask the provider if the botulinum toxin product is FDA approved and obtained from a reliable source.

Adult intestinal toxemia occurs when ingested spores germinate in the intestine, releasing toxins. It most often affects individuals who are immunocompromised, taking antibiotics, or living with gastrointestinal

conditions. The incubation period and symptoms are similar to that of infant botulism.

Bioterrorism: Botulinum toxin is also considered a potential biological weapon. Consideration of intentional use of the toxin should be suspected in the event of clusters of acute flaccid muscular paralysis originating from common geographic locations or among attendees at identical public events or gatherings.

No vaccine for botulism is available; antitoxins are not useful in prevention and there is no natural immunity to the disease.

Clinical diagnosis, the foundation of early recognition, is confirmed by specialized testing. However treatment should not wait for laboratory confirmation. Routine laboratory tests and CSF studies remain essentially normal, although occasionally a borderline elevation in protein level is seen in CSF. Botulism is frequently misdiagnosed as polyradiculoneuropathy, Guillain-Barre syndrome, myasthenia gravis, or other central nervous system diseases. The paralysis caused by botulinum toxin always initially manifests itself as a cranial paralysis with a descending progression. An absence of sensory nerve damage also characterizes the intoxication.

Prompt diagnosis of this disease is imperative. A supply of antitoxin is maintained by the Centers for Disease Control and Prevention (CDC), and the agency maintains intensive surveillance for the disease. Use of antitoxin early in the course of the disease is effective in reducing the severity of symptoms.

Figure: Botulism - Louisiana, 1990-2023