



BOTULISM: LIFE-THREATENING ILLNESS

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Introduction. Botulism is a potentially fatal syndrome of diffuse, flaccid paralysis caused by botulinum neurotoxin (BoNT), produced by the bacterium *Clostridium botulinum*. The toxin is produced as the bacteria multiply; the bacteria multiply under anaerobic and mildly acidic conditions. The neurotoxin BoNT is considered the deadliest toxin known due to its high potency and lethality. Based on the different serotypes known today, a classification of serotype variants termed subtypes has been proposed according to sequence diversity and immunological properties. Authors described seven types of botulinum toxins (A–G), but human botulism is primarily caused by types A, B, E, while types C, D and F cause illness in other mammals, birds and fish. Most studies demonstrated that antitoxin should be administered as soon as possible after a clinical diagnosis. There is no vaccination to protect people against botulism. The effective prevention measures of foodborne botulism are based on good practice of food products preparation and compliance with basic hygiene rules.

Material and methods. The purpose of the study was to find relevant publications on the etiology, epidemiology, diagnostic methods and prevention measures of botulism, critically analyze them and describe the research findings. Therefore, a bibliographic review was performed using online databases as PubMed, Scopus, Web of Science, and Google Scholar as well as the following keywords *C. botulinum*, botulism, botulinum neurotoxin for identifying the evidence published both in the country and abroad.

Results. When analyzing the existing evidence, there was noticed that botulism is a severe neurological disease caused by the complex family of botulinum neurotoxins that can be acquired through exposure to the pre-formed toxin via improperly-stored food, iatrogenic injection, and bioterrorism. Moreover, in infants and wound botulism cases it can be the result of a systemic release of the toxin in vivo. Most studies have shown that botulism is an intoxication usually caused by ingestion of potent neurotoxins, the botulinum toxins, formed in contaminated foods. Person to person transmission of botulism does not occur. The standard method for rapid diagnosis is positive laboratory findings (detection of toxin in the patient's serum, feces, gastric, intestinal contents, wound swabs and tissues), however the clinical manifestations and patient history are also very important. Laboratory rapid diagnosis of botulism is required for successful therapy, considering that it is a life-threatening condition. This disease can be fatal if left untreated, but most people who receive a prompt diagnosis and treatment can fully recover from the illness.

Conclusions. The results of many scientific papers have demonstrated that botulism is a rare but serious condition caused by toxins from bacteria called *Clostridium botulinum*. The authors described the principle of diagnosis and showed that it is usually based on anamnesis and clinical findings followed by laboratory investigations: the presence of BoNT in serum, stool or food, or a culture of *C. botulinum*. Also, each case of botulism is considered a public health emergency and requires immediate report of the suspected case to the ministry of health or national agency of public health.