Editorial

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The recent outbreak of Iatrogenic botulism: point of view from the present world: editorial

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Dear Editor,

Iatrogenic botulism, a rare acquired neuromuscular junction disorder with descending flaccid paralysis induced by botulinum neurotoxins, is the most recent man-made form of botulism and may happen as an adverse event following therapeutic or cosmetic use[1]. A rare but potentially fatal neuroparalytic disease known as botulism can be brought on by iatrogenic or unintentional exposure to botulinum toxins. Rarely, patients who received botulinum toxin for esthetic purposes have reported iatrogenic causes of botulism. Botulinum toxins function by preventing the release of acetylcholine, which relaxes muscles. There are recognized serotypes A through G, with type A causing the most severe illness. Botulinum neurotoxin can cause weakness, double vision, drooping eyelids, hoarseness, loss of bladder control, and difficulty breathing if it enters the vascular system and is transported to peripheral cholinergic nerve terminals, including neuromuscular junctions, postganglionic parasympathetic nerve endings, and peripheral ganglia[2].

Five cases of iatrogenic botulism in patients who had surgical procedures involving the injection of botulinum neurotoxin type A (BoNT/A) in healthcare facilities in Turkey were reported to WHO by the National IHR Focal Point (NFP) for Germany on 7 March 2023. As of 17 March 2023, 71 clinical instances of botulism associated with the aforementioned medical procedures carried out in Turkey between 22 February and 1 March 2023 have been reported from Turkey (53 cases), Germany (16 cases), Austria (one case), and Switzerland (one case). Adults in all cases; middle-aged women make up the majority. Two private hospitals in two locations in Türkiye were found among the 69 cases, for which treatment site information is known, with 66 cases related to one facility and three instances to another hospital. The cases' clinical presentations ranged from minor to major. Hospitalizations occurred in several situations. In some situations, botulinum antitoxin was used in the treatment. ICU received at least five admissions. There are no known fatalities. Turkish authorities' investigations revealed that licensed BoNT items were used for purposes other than those for which they were permitted (off-label use). On 1 March 2023, the appropriate departments of both hospitals had their operations suspended, and inquiries had been opened into who was responsible. The Turkish Medicines and Medical Devices Agency confiscated the goods used in the therapy and took them for inspection and evaluation. Since the last case was recorded on 8 March 2023, when symptoms first appeared, there have been no more symptomatic cases[3]. According to the facts currently available, medical measures were made in every case to aid with weight loss. Between 3 February and 1 March 2023, these were carried out in Turkey. Two private hospitals, one in Istanbul and one in Izmir, reportedly treated the cases of obesity using intragastric injections of BoNT. According to Germany, the injected doses of BoNT for German patients ranged between 1000 and 2500 units[4].

Following injection, the toxin is taken up by the bloodstream, dispersed throughout the body, and results in the classic symptoms of botulism. First-line therapy for hemifacial spasms and focal dystonia, including blepharospasm and cervical dystonia, is therapeutic BoNT injections. Additionally, they can be suggested as treatments for strabismus and other oculomotor conditions, focal spasticity (spastic foot, upper and lower limb spasticity), overactive bladder, and autonomic conditions such as hyperhidrosis, Frey's syndrome, and sialorrhea. Injections of BoNT might have an antinociceptive effect. The use of BoNT types A and B has occasionally resulted in fatalities. Injected doses, which may be relatively high mostly in the treatment of lower limb spasticity, have been linked to limited botulism-related symptoms (ptosis, diplopia, and dysphagia), uncommon systemic events (flu-like syndrome, generalized weakness, and respiratory distress), and occasionally fatalities. Injection of unlicensed, highly concentrated botulinum toxin may cause severe botulism, while authorized doses are too low to produce systemic disease[5]. Although no conclusive evidence supports recommendations on the best treatment doses and intervals, the usefulness of guidance

HIGHLIGHTS

- An uncommon acquired neuromuscular junction condition called iatrogenic botulism.
- In the neuromuscular connections and autonomic ganglia, botulinum toxin prevents the transmission of cholinergic signals.
- The most frequent side effects of iatrogenic botulism include weakness and dysphagia.

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techniques for injection, the impact on quality of life, or the duration of treatment effects, BoNT type A (BoNT-A) is frequently used for cosmetic purposes and as a treatment for muscle dystonia, spasticity, hyperhidrosis, neurogenic bladder, strabismus, and pain syndromes. Despite potential postinjection side effects, such as injection site responses, flu-like symptoms, ptosis, weakness, and allergic reactions, the treatment has consistently been rated as safe[6].

The most frequent side effects of iatrogenic botulism are weakness and dysphagia, whereas ophthalmological and oropharyngeal symptoms are more common in the cosmetic group and dyspnea in the therapeutic group. About 20% of patients require antitoxin therapy. Iatrogenic botulism is primarily diagnosed clinically, hence, it is important to distinguish it from neurological illnesses with comparable clinical symptoms. Iatrogenic botulism can be prevented by paying close attention to the drug formulation, dose, and delivery during botulinum toxin injection[7]. If the recommended total dose of botulinum toxin has been exceeded, and the medication spreads locally from the injection site or is redistributed to the systemic circulation, iatrogenic botulism may manifest. It is possible that the frequency of negative medication reactions is underreported. It could be necessary to start the available antidote quickly. The recommended course of action for treating iatrogenic botulism was created by studying noniatrogenic botulism[8]. We covered the latest outbreak of iatrogenic botulism: a modern perspective.

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All data used to support the findings of this study are included in the article.

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