

Introduction

Caused by toxins (usually A, B & E of the 8 A-G known) produced by obligate anaerobic bacteria *Clostridium botulinum*, *C. baratii* and *C. butyricum*. Common in soil & can survive in spore form.

Food-borne botulism

Spores germinate and bacteria reproduce in aerobic conditions such as home-tinned/canned foodstuff (as not irradiated like commercial canning) or fermented uncooked dishes, producing toxin which if uncooked → botulism

Intestinal botulism

Infant botulism is uncommon, and occurs after a baby ingests spores (classically from untreated honey) which germinate in the less acidic (compared to adults) gastric juices and the resulting bacteria release toxin. Adult botulism very rare

Wound botulism

The organisms get into an open wound and reproduce in an anaerobic environment also if drug users inject sub cut. Isolated cases of botulism have been described after inhalation by laboratory workers and after cosmetic use of inappropriate strengths of Botox.

Biological terrorism potential: the toxin is regarded as one of the most lethal bioweapons
Rare in Australia

Presentation

Occur 2h-8d post-exposure, depending on dose/toxin. May be delayed onset in infant botulism:

- Acute symmetrical, *descending*, flaccid paralysis, usually begins with blurred vision, ptosis
- There may be difficulty in swallowing and speaking, D & V or constipation & retention.
- The patient remains alert
- Acute onset of bilateral cranial nerve involvement
- Failure of accommodation, pupils fixed in mid position or dilated
- Fever is unusual, as is loss of sensation

Investigations

Detection of toxin in serum, urine, stool, vomit or gastric fluid. CSF protein normal.
Spirometry, pulse oximetry, arterial blood gases

Management

Respiratory support: Recovery time typically ranges 30-100 days. Tracheostomy may be req

Decontamination, Enhanced elimination: Activated charcoal, lavage, catharsis,

Antitoxin: Trivalent antitoxin (A, B, E) or polyvalent antitoxin (A to F) also available

- An antitoxin may be beneficial, even when provided several weeks after toxin ingestion.
- Antitoxin will not neutralise toxin already bound to NMJ.

Because equine antitoxin 20% may get serum sickness or hypersensitivity reaction

Recently Human Botulism Immune Globulin Intravenous (Human) (BIG-IV), which neutralizes botulinum toxin was evaluated for safety and efficacy in treating infant botulism.

Prognosis

Clinical improvement may take weeks to months, but most cases make a recovery.

Fatal in 5-10% of cases.