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HSS(MD) 32/02

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All General Practitioners – please ensure this message is seen
by all practitioners and non-principals working in your practice
and retain a copy in your locum information pack

Medical Directors of Trusts for onward cascade to:

- Staff in A&E Departments
- Staff in Intensive Care Units and HDUs
- Consultants in Infectious Disease
- Consultant Microbiologists
- Consultant Neurologists
- Consultant Pathologists
- Services dealing with drug misuse

Chief Executives of HSS Boards and Trusts

Directors of Public Health

Consultants in Communicable Disease Control

Communicable Disease Surveillance Centre (NI)

Drug and Alcohol Co-ordinators

Drug and Alcohol Co-ordination Team Members

Northlands

NICAS

Dunlewey Substance Advice Centre

Carlisle House.

Dear Colleague

CLUSTER OF WOUND BOTULISM CASES IN INJECTING DRUG USERS

Background

Thirteen clinically diagnosed cases of wound botulism in injecting drug users (IDUs) in the UK and the Republic of Ireland have been reported to the PHLS Food Safety Microbiology Laboratory (FSML) since the beginning of 2002. A previous CMO letter dated 22 February 2002 HSS(MD)3/02 alerted you to three suspected and one confirmed case of wound botulism possibly associated with injecting drug use. Six cases have been reported since 1st August 2002 of which four are from the Southwest of England. All cases had a flaccid paralysis. These cases may be caused by a batch of drugs contaminated with the anaerobic bacterium *Clostridium botulinum*. Reports of wound botulism in IDUs are a relatively new phenomenon with no clinically diagnosed cases in the UK and Republic of Ireland up to the end of 1999, six reports in 2000 and four in 2001.

Clinical features

The key clinical syndrome produced by botulinum toxin is an afebrile, descending, flaccid paralysis. Patients with botulism typically present with difficulty speaking, seeing and/or swallowing. They may have double vision, blurred vision, drooping eyelids, slurred speech, difficulty swallowing, and muscle weakness. If untreated, paralysis may progress to the arms, legs, trunk and respiratory muscles. There is usually no fever, no loss of sensation and no loss of awareness. There may also be autonomic signs with dry mouth, fixed or dilated pupils, and cardiovascular, gastrointestinal and urinary autonomic dysfunction. If onset is very rapid, there may be no symptoms before sudden respiratory paralysis occurs, which may be fatal. Recovery can take months. **Clinicians should suspect botulism in any patient with an afebrile, descending, flaccid paralysis.**

Laboratory diagnosis

Confirmation of the clinical diagnosis is by the demonstration of botulinum toxin in blood samples or, in the case of wound botulism, by the identification of *C. botulinum* in wound specimens. Routine laboratory tests are not helpful and **specimens should therefore be sent immediately to the reference laboratory.**

Samples to be taken from acutely ill patients include:

- **Serum.** At least 10ml. Serum samples must be collected before antitoxin is administered.
- **Wound.** Pus. As much as possible in a sterile container. If pus is not available, a swab of the lesion should be taken and put immediately into a transport medium for anaerobic culture.
- **Biopsy tissues.** If surgical debridement is performed, biopsy tissues should be placed immediately into a sterile container.
- **Post mortem specimens.** Heart blood (10ml), if not haemolysed, should be sent for serum for serum collection. Specimens from infected wounds may also be useful.

All samples must be kept **refrigerated** after collection.

All specimens should be sent directly to the reference laboratory with the sender's name and address clearly marked. The reference laboratory should be telephoned prior to sending the sample.

Reference laboratory for botulinum toxin testing:

Dr Moira Brett

Food Safety Microbiology Laboratory.

Central Public Health Laboratory

61 Colindale Avenue

London, NW9 5HT

Tel: (+44) 020 8200 4400 ext 4933/4116 E-mail: mbrett@phls.nhs.uk

Out of office hours, laboratory personnel can be contacted through the PHLS Communicable Disease Surveillance Centre (CDSC) duty doctor on 020 8200 6868.

Clinical management

Botulinum antitoxin is effective in reducing the severity of symptoms if administered early in the course of the disease. *C. botulinum* is sensitive to benzyl penicillin and metronidazole. In cases of wound infection, antimicrobial therapy and surgical debridement should reduce the organism load and therefore toxin production, but circulating toxin can only be neutralised by the early administration of antitoxin. **Where there is definite clinical suspicion of botulism, treatment with antitoxin should not be delayed for microbiological testing.**

Botulinum antitoxin is held at the Belfast City Hospital - details are available from the Consultant Bacteriologist on call who can be reached at 028 90 329241. The use of antitoxin should also be discussed with a Consultant Neurologist, if feasible.

Preventive measures

The risk of death in individuals presenting with wound botulism may be reduced if supportive therapy and antitoxin are provided promptly. Increased awareness amongst clinicians may facilitate prompt diagnosis and treatment.

Wound botulism is thought to occur in IDUs when heroin is contaminated with *C. botulinum* and anaerobic conditions exist at injection sites. The following advice may reduce the risk of wound botulism in IDUs:

- If you must take heroin, smoke it instead of injecting.
- If you must inject, do not inject into muscle or under the skin: make sure you hit the vein - your blood is better at killing bacteria than your muscle.
- Don't share needles, syringes, cookers/spoons or other 'works' with other drug users.
- Use as little citric acid as possible to dissolve the heroin. A lot of citric acid can damage the muscle or the body under the skin, and this damage gives bacteria a better chance to grow.
- If you inject more than one type of drug, inject each at a separate place on your body and with clean works for each injection. This is important because certain drugs (e.g. cocaine) could give bacteria in heroin a better chance to grow.
- If you get swelling, redness, or pain where you have injected yourself, or pus collects under the skin, you should get a doctor to check it out immediately, especially if the infection seems different to others you may have had in the past.

Causative organism

The symptoms of botulism are caused by a toxin produced by the anaerobic spore forming bacterium *Clostridium botulinum*. The toxin blocks the release of acetylcholine at the neuromuscular junction resulting in a descending flaccid paralysis. Botulism is not spread from one person to another.

There are three naturally occurring forms of botulism:

- Food-borne botulism, caused by ingestion of pre-formed toxin.
- Wound botulism, which occurs when *C. botulinum* spores contaminate a wound, germinate and produce toxin in vivo.
- Intestinal colonisation botulism, usually seen in infants, caused by growth of *C. botulinum* and production of toxin in vivo.

Reporting & public health investigation

Since food borne botulism constitutes a public health emergency, food must be excluded as a source for all cases of botulism. The PHLS Communicable Disease Surveillance Centre has prepared a detailed questionnaire that CCDCs can use to obtain information on clinical presentation, food history and injecting behaviour from all suspected cases of botulism. Food samples associated with suspected cases of food borne botulism must be obtained as a matter of extreme urgency in order to prevent further cases.

Samples of heroin can be tested by the PHLS for the presence of microbial contamination. If the police are in possession of drugs believed to be associated with suspected cases of wound botulism, please contact the PHLS FSML on 020 8200 4400 ext 4933 to discuss arrangements for testing.

Clinicians and CCDCs are asked to report any suspected cases of botulism to Moira Brett at the PHLS FSML (tel: 020 8200 4400 ext 4933) or Sarah O'Brien / Peter Horby at the PHLS CDSC (tel: 020 8200 6868 ext 4422 / 8076). Out of hours, suspected cases should be reported to the CDSC duty doctor on 020 8200 6868.

Yours sincerely



H CAMPBELL (Dr)
Chief Medical Officer

Hcc: Dr Ian McMaster
Jo Daykin
Martina Campbell
Jim Hamilton