Anthrax

Epidemiology in New Zealand

The last case of human anthrax in New Zealand was reported in 1940, and the last recorded outbreak among domestic livestock was in 1954. Human anthrax disease in New Zealand may occur in a traveller or through contact with illegally imported and contaminated animal products such as wool, hides, leather or bone.

Case definition

Clinical description

Anthrax is an illness with acute onset characterised by several distinct clinical forms including:

- a skin lesion that has evolved over 2–6 days from a papule, through a vesicular stage to a depressed black eschar, with considerable swelling around the lesion
- a respiratory illness of abrupt onset followed by the development of dyspnoea progressing to hypoxia, with X-ray evidence of mediastinal widening
- abdominal distress followed by fever and signs of septicaemia (rare).

Ninety percent of cases are cutaneous anthrax.

Laboratory test for diagnosis

Laboratory confirmation requires at least one of the following:

- isolation of *Bacillus anthracis* from a clinical specimen
- demonstration of *B. anthracis* in a clinical specimen by immunofluorescence
- significant antibody titres developing in an appropriate clinical case.

If anthrax is suspected, discuss testing with the Institute of Environmental Science and Research (ESR).

Case classification

- **Under investigation:** A case that has been notified, but information is not yet available to classify it as confirmed.
- **Probable:** Not applicable.
- **Confirmed:** A clinically compatible illness that is laboratory confirmed.
• **Not a case:** A case that has been investigated and subsequently found not to meet the case definition.

**Spread of infection**

**Incubation period**

- **Cutaneous:** Typically 1 day.
- **Inhalational:** From 1–7 days, although incubation periods up to 60 days are possible.
- **Gastrointestinal:** Typically 3–7 days.

**Mode of transmission**

Humans can become infected with anthrax by handling or consuming products from infected animals, from being bitten by flies who have fed on infected animals, by inhaling anthrax spores (especially from contaminated animal products such as hides) or through cuts and abrasions that become infected with contaminated soil. In 2001 several people in the United States contracted anthrax from spores maliciously distributed through the postal system.

**Period of communicability**

Anthrax is not transmitted person to person. Articles and soil contaminated with spores in endemic areas may remain infective for many years.

**Notification procedure**

Attending medical practitioners or laboratories must immediately notify the local medical officer of health of suspected cases. Notification should not await confirmation.

**Management of case**

**Investigation**

Obtain a history of travel and contact with imported animal products (for example, wool, hides, leather, bone) or unknown powder substances.

**Restriction**

Standard infection control precautions apply for all direct clinical care. Although a cutaneous lesion will be sterile after 24 hours' treatment, dressings soiled with discharges from lesions should be burned and reusable surgical equipment sterilised.

**Treatment**

The case should be under the care of an infectious diseases physician.
**Counselling**

Advise the case and their caregivers of the nature of the infection and its mode of transmission.

**Management of contacts**

Ensure that all people potentially at risk are provided with information about the disease including symptoms and decontamination if relevant.

When exposure to anthrax is considered credible, post-exposure prophylaxis should be recommended in consultation with an infectious diseases physician.

If the contact was a result of a suspected deliberate exposure to anthrax, then decontamination should occur with soap and copious amounts of shower water. Clothing and personal effects should be placed in a sealed plastic bag, which should be labelled with the owner’s contact details and an inventory of contents, and kept as evidence in case of a criminal trial or returned to the owner if the threat is unsubstantiated.

**Other control measures**

**Identification of source**

Check for other cases in the community, household and workplace. If the case may have acquired the infection in New Zealand, liaise with Ministry for Primary Industries staff on phone: 0800 809 966 to investigate potential animal sources of infection.

**Outbreak control measures**

These include:
- coordination with appropriate emergency services, including the police
- active case finding
- alerts for medical practitioners and hospitals
- release of appropriate public information
- control of contacts, including field workers involved in environmental control measures
- environmental control measures.

**Disinfection**

Clean and disinfect objects or surfaces soiled with discharges from cutaneous lesions. Use a sporicidal product (see Appendix 1: Disinfection).
Health education

Control and handling of imported fibres and other products to prevent transmission of anthrax is legislated under the Anthrax Prevention Regulations 1987. For further information, see the Environmental Health Protection Manual (available from the Ministry of Health).

Reporting

Ensure complete case information is entered into EpiSurv.

On receiving a notification, medical officers of health should immediately notify the Director of Public Health, Ministry of Health.

If the case may have been acquired in New Zealand, the Ministry of Health will notify the appropriate staff in the Ministry for Primary Industries and the Department of Labour (if the exposure is employment-related) so that further investigation of the source can be undertaken.

References and further information


