Anthrax

What is anthrax?

Anthrax is a bacterial disease caused by infection with *Bacillus anthracis*. The same bacteria can lead to three forms of the disease:

- cutaneous anthrax
- intestinal anthrax
- inhalational (or pulmonary) anthrax.

Anthrax occurs among grazing animals in many parts of the world, including livestock in parts of western NSW. Anthrax is a very rare disease in humans.

What are the symptoms?

- People who contract cutaneous anthrax develop dark coloured, painless lesions within 3 to 10 days (usually between 5 and 7 days) of exposure. These lesions can be associated with swelling of the surrounding tissue. Even without treatment, four out of five people with cutaneous anthrax survive. With treatment, patients generally make a full recovery.
- People who contract intestinal anthrax develop abdominal pain and fever between 3 and 7 days after exposure, and typically death follows soon after.
- People who contract anthrax by inhalation may first have flu-like symptoms. Over several days, the disease can progress with severe breathing difficulties and shock. Inhalational anthrax has a 60–90% fatality rate. The incubation period for inhalational anthrax is most frequently between 1 and 5 days but may be as long as 60 days.

How is it spread?

- In approximately 95% of cases of anthrax, the bacteria gain entrance through broken skin or wounds (which can cause cutaneous anthrax) from a source such as the carcass of an infected animal.
- Anthrax bacteria can also be ingested in poorly prepared meat from infected animals (which can cause intestinal anthrax) or breathed in (which can cause inhalational or pulmonary anthrax). Intestinal and inhalational anthrax in humans have not been recorded in Australia.
- In late 2001, several people in the USA contracted anthrax from spores that were maliciously distributed through the mail. Both cutaneous and inhalational anthrax were reported.
- Anthrax bacteria may remain in the soil for many years in the form of spores that survive being dried out. These spores are usually the cause of infections in grazing animals. However, human infection from the source of spores is unlikely, as a large concentration of spores is needed for infection to occur.
- Anthrax is not known to be transmitted from person to person.

Who is at risk?

Each year several cases of anthrax in livestock are reported. The handling of infected animals and their carcasses represents a risk to people.

How is it prevented?

- Anyone who handles material potentially contaminated with anthrax should wear gloves, overalls and rubber boots, and ensure that skin breaks are protected with sealed waterproof dressings.
- All contaminated items and clothing should be stored in labelled double plastic bags until exposure to anthrax is excluded. If anthrax is confirmed, all contaminated items need to be either incinerated or sterilized at 121°C for 30 minutes.
- Thorough hand washing and showering with soap are also a very important protection against infection.
- In some cases where a person has had significant exposure to anthrax spores, antibiotics may help prevent infection.
- A vaccine is available to people who have an ongoing risk of exposure, such as workers handling infected animals or animal products. However, immunisation is not recommended for the general population due to the extremely low risk of infection.

How is it diagnosed?

- Confirmation requires isolation of anthrax bacteria from the blood, skin lesions or respiratory secretions of patients.
- Cutaneous anthrax can be suspected based on the appearance of the ulcer.

How is it treated?

Several antibiotics, including penicillin, doxycycline and ciprofloxacin, can be used to treat anthrax infections.

What is the public health response?

- Laboratories must notify the local public health unit of any suspected or confirmed anthrax cases.
- Public health unit staff will investigate all cases to find out how the infection occurred, identify other people at risk of infection, implement control measures and provide other advice.

For more information please contact your doctor, local public health unit or community health centre.

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