

Fact Sheet: Anthrax

Epidemiology

Anthrax is caused by *Bacillus anthracis*, a bacterium that can form spores. Spores allow it to survive in the soil for long periods of time.

Anthrax is primarily a disease of herbivorous mammals such as cattle, sheep, goats and buffaloes, which can ingest anthrax spores while grazing. Humans generally acquire the disease directly or indirectly from infected animals, or occupational exposure to infected or contaminated animal products. Control in livestock is therefore the key to reduced incidence. There are no documented cases of person to person transmission. The disease's impact on animal and human health can be devastating.

The disease exists in animals and humans in most countries of Africa and Asia, in several southern European countries, in the Americas, and certain areas of Australia. Disease outbreaks in animals also occur sporadically in other countries. Prevalence of anthrax in Bangladesh was not well documented, however, since August 2009 IEDCR has investigated 14 outbreaks of cutaneous anthrax in three districts of Bangladesh (Pabna, Sirajganj and Tangail). Recently, more and more outbreaks are being reported.

Anthrax in human

There are 3 types of anthrax in humans: cutaneous anthrax, gastrointestinal tract anthrax, and pulmonary (inhalation) anthrax. The incubation period for the disease is approximately 2 to 7 days.

In people, *cutaneous anthrax* accounts for about 95% of all infections and develops when *B. anthracis* comes in contact with the skin. Antibiotic treatment cures cutaneous anthrax; if appropriately treated, death is rare.

Intestinal anthrax results from consumption of contaminated meat. Affected individuals may experience nausea, vomiting, and fever, followed by abdominal pain, blood in the vomitus, and severe diarrhea. Mortality is estimated at 25 to 75%. No case of intestinal anthrax has been reported in Bangladesh so far.

Inhalational anthrax may initially present as a flu-like illness. A short period of improvement may follow, after which the patient rapidly deteriorates with high fever, respiratory distress, and shock. Fatalities approach 95% if not treated within the first 48 hours. It is very rare.

Anthrax in animals

Anthrax infection in animals can be respiratory or intestinal. Clinical signs may include fever, respiratory difficulty, excitement followed by depression, incoordination, vomiting, diarrhea, bloody discharges, convulsions, and death.

Prevention

Prevention of anthrax in both humans and animals is based on control measures in livestock in endemic areas, such as the safe disposal of anthrax carcasses and mass vaccination of cattle. The most efficient method of disposal is incineration in a manner that ensures heat sterilization of the underlying soil. Alternatively burying the anthrax carcass at least 6 feet deep under soil may serve the purpose. However, vaccination of livestock is the most efficient way of preventing this disease.

Isolation of human cases is not required and there are no quarantine requirements as human to human transmission has not been documented. Dressings and other contaminated materials should be disposed of, preferably by incineration.

Treatment

Infection in human can be treated with antibiotics. Because the course of the disease is rapid, prompt administration is essential. Effective antibiotics include ciprofloxacin, doxycycline, and phenoxymethyl penicillin.

Prepared By: IEDCR