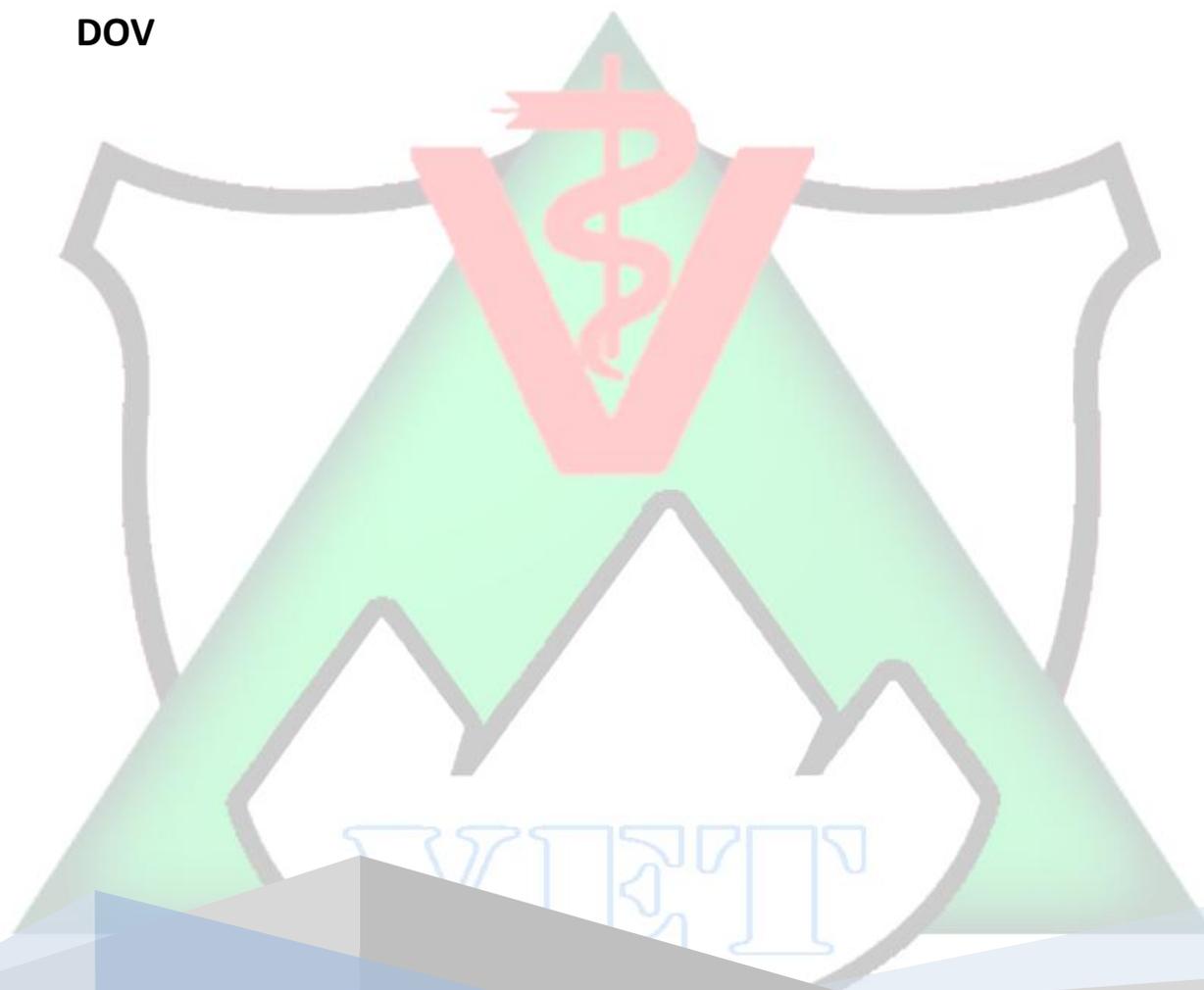


Anthrax

Animal Health department

DOV



Anthrax

What is anthrax?

Anthrax is an acute, highly fatal disease, caused by a spore-forming bacterium called *Bacillus anthracis*. The disease occurs sporadically and can affect all mammals including humans. Animals generally acquire the disease from a contaminated environment. Humans usually acquire this disease directly from infected animals or via occupational exposure to contaminated animal products.

Where is anthrax found?

Anthrax has an almost worldwide distribution and has been described in literature since ancient times. In Iraq occur in west and north

Which animals are affected by anthrax?

Although all mammals are susceptible to anthrax, it is primarily a disease of herbivores. Cattle, sheep, goats and horses are highly susceptible. Laboratory animals such as guinea pigs, rabbits and mice readily contract the disease. Omnivores, like pigs, and carnivores, such as dogs and cats, are less susceptible and can sometimes be exposed to the bacterium repeatedly before becoming infected. Birds and wildlife also appear to be at a lower risk for anthrax.

How do animals become infected?

B. anthracis is shed by an animal that is dying or has died of anthrax, and provides a source of infection for other animals. The bacteria can be inhaled or can enter the body through an existing break in the skin or mucous membrane; however, the most common means of livestock infection is ingestion of the spores from contaminated pasture, feed or soil while grazing. The agent then germinates and multiplies in the blood stream. Initially the bacteria are filtered out by the spleen, but the release of toxins quickly results in the breakage of blood vessels and in fatal internal bleeding.

When animals die from anthrax they often discharge anthrax-contaminated blood, which leads to contamination of the environment, spore formation, and the risk of exposing other animals.

What are the clinical signs of an anthrax infection in animals?

In highly susceptible species like cattle, the time between the onset of mild symptoms (feed refusal, lower milk production) and death can be a matter of hours. Often the first sign of an anthrax outbreak is one or more sudden deaths in affected livestock.

Animals that do not die suddenly may appear distressed, have difficulty breathing, stop eating and drinking, and develop swellings, often in the sub-mandibular area.

Temperature may be normal or elevated. After death, the animal carcass may leak bloody fluids from body openings (rectum, nostrils, mouth, etc.) and bloat rapidly-rigor mortis may not occur.

How is anthrax diagnosed?

Anthrax may be suspected following the sudden death of an animal or observation of any of the clinical signs noted above. Anthrax is diagnosed by examining blood (or other tissues) for the presence of the bacteria. Samples must be collected carefully to avoid contamination of the environment and to prevent human exposure to the bacteria. Blood samples from relatively fresh carcasses will contain large numbers of *B. anthracis*, which can be seen under a microscope, cultured and isolated in a laboratory, or detected by rapid tests, e.g. polymerase chain reaction (PCR).

What is the treatment or control protocol?

Control and treatment is intended to break the cycle of infection. Control measures include the removal of animals from the anthrax contaminated pasture, quarantine of the premises, proper carcass and contaminated material disposal, disinfection of the premises, and vaccination of exposed susceptible animals. Vaccination, used as a control measure, prevents anthrax in most animals for about one year. The Stern vaccine is most widely used and it is licensed in Canada for use in cattle, sheep, horses, goats and swine. Quarantine is imposed for 21 days after all animals have been vaccinated, or for 21 days after the last case of anthrax occurs on the contaminated premises, whichever comes later.

Naturally occurring anthrax can be treated with penicillin or tetracycline. As treatment interferes with the development of post-vaccination immunity, antibiotics should not be administered during the 8 days immediately before or after vaccination. Furthermore, combining vaccination and antibiotic treatment will extend the duration of the quarantine.

What precautions should be taken when anthrax is suspected or diagnosed?

If you suspect an animal is ill or has died of anthrax, immediately contact your private veterinarian. Do not handle or move the carcass. If anthrax is suspected, the veterinarian will contact the nearest Veterinary District Office. A Veterinary District Office veterinarian will investigate the case, collect samples, and implement anthrax control measures as outlined above.

Is there a human health risk?

Humans are susceptible to anthrax infection; however, it is rare to find a human case of anthrax associated with an animal outbreak if proper precautions are taken during the handling and movement of affected animals and carcasses. The principle sources of anthrax infection in humans are direct or indirect contact with infected animals or carcasses, and occupational exposure to infected or contaminated animal products. Infection in humans can occur when B. anthracis enters the skin through existing cuts and abrasions, through ingestion of the bacteria, or through inhalation of the spores.

In humans, three forms of anthrax occur depending on the route of infection. Cutaneous anthrax, the most common, is acquired through breaks in the skin and causes black, coal-like skin lesions. Gastrointestinal tract anthrax is contracted from eating contaminated meat from an animal that died of anthrax. This form of the disease can result in fever, vomiting, diarrhea, weakness, and other gastrointestinal problems. Pulmonary anthrax, which is rare, results from the inhalation of airborne spores. Signs of this form of the disease resemble the common cold and progress to severe breathing problems and shock.

Additional Information

For more information about Anthrax, contact

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