Anthrax – What is it



What is anthrax and what causes it?

Anthrax is an infectious disease that can affect the skin, the lungs, as well as the mouth, throat and gastrointestinal tract. The infection sometimes can spread to other parts of the body, especially if treatment is not started early. For example, anthrax could, very rarely, lead to inflammation of the meninges (meningitis).

Anthrax is caused by a bacterium called Bacillus anthracis. The bacteria occur in living tissue of infected animals. The bacteria can form spores under certain conditions when, for example, body fluids infected with the bacteria are exposed to the air. The bacteria cannot live for long outside an animal. On the other hand, the spores can survive in soil and some other materials for decades.

How is anthrax contracted?

To multiply, Bacillus anthracis produces small spores. When these spores enter a cut or abrasion on the skin they start a skin infection usually called cutaneous anthrax. If the spores are inhaled, they are small enough that they enter the lungs and cause inhalation anthrax. Eating contaminated, undercooked meat can cause oropharyngeal (mouth and throat) and gastrointestinal anthrax.

Is anthrax contagious?

No. Spreading anthrax from person to person is extremely unlikely to occur. It also requires a relatively large dose to infect a person – one would have to inhale 8,000 to 50,000 spores. Smallpox takes only 10 to 100 organisms to cause the disease.

What are the symptoms of anthrax?

Symptoms of the disease vary depending on how the disease was contracted. Symptoms usually occur within 7 days of exposure, but usually between 2 to 5 days. The skin infection begins with itchy bumps that resemble insect bites. Skin bumps develop into painless black blisters.

If the Bacillus anthracis spores are inhaled, the initial signs of disease are usually flu-like symptoms including fever, sore throat, feeling unwell, body

aches, fatigue, cough and chest discomfort. The symptoms may progress to severe breathing problems.

In the case of intestinal anthrax symptoms usually begin a few days after ingestion of the contaminated meat. The symptoms include fever, chills, swelling of neck or neck glands, abdominal pain, fever, nausea, loss of appetite, vomiting and diarrhea.

How is anthrax recognized?

Confirmation of an anthrax diagnosis requires laboratory examinations which identify Bacillus anthracis in the blood, skin lesions or respiratory secretions.

Laboratory blood tests can also detect whether the amount of certain specific protein (i.e. antibodies) has increased in the blood. An increase indicates infection by Bacillus anthracis. Antibodies are produced by special cells of the body’s infection defense system to reduce or neutralize the effect of invading microorganisms. Tests may also be done using skin lesion swabs, spinal fluid or respiratory secretions.

How is anthrax treated?

Anthrax can be controlled with antibiotics. To be effective, treatment should start early after exposure. If left untreated or if treatment starts too late, anthrax can be fatal.

Is anthrax an occupational concern?

Human anthrax is unusual in North American. All these people developed skin infections and recovered. Anthrax can be an occupational hazard for workers who process hides, hair, bone and bone products and wool. Animal breeders, slaughterhouse workers, trappers and hunters, fur industry workers, tanning and leather industry workers, veterinarians, or wildlife, agricultural, and laboratory workers who handle infected animals or animal products can also be at risk for the infection.

How can we prevent anthrax?

Workplaces which process animal products should have adequate ventilation systems including local exhaust system to reduce dust levels. Clean the workspace with a high-efficiency particulate (HEPA) air vacuum. Workers who handle raw animal materials should be informed about modes of transmission. Avoid shaking or beating hides, dry sweeping or using compressed air (for cleaning). Workers should follow good personal hygiene practices including care of skin abrasions. Workers should use adequate protective clothing (such as a properly fitted face mask or respirator (N-95), eye protection and protective gloves) and facilities for washing and changing clothes after work.

Regulators recommends that laboratory workers who work with anthrax should follow biosafety level 3 practices in appropriately designed and maintained facilities.

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