

CUTANEOUS ANTHRAX

Background:

Causative organism is *Bacillus anthracis*, an encapsulated, aerobic, gram-positive spore-forming rod-shaped bacterium. Humans become infected by ingestion of spores from infected animals (e.g., sheep, goats or cattle), animal products, such as hides or hair, or intentional malicious acts of bioterrorism. All suspected or confirmed cases of anthrax must be reported to the local department of public health and the Illinois Department of Public Health (IDPH).

Incubation Period:

Usually about 7 days post exposure with a range of 1 to 12 days.



Signs/Symptoms:

- 1) May have localized itching initially
- 2) Usually 7 days post exposure, a painless papule will develop, which may resemble an insect or spider bite
- 3) Within 1 to 2 days, the papule will enlarge and develop a central vesicle with surrounding non-pitting edema
- 4) About 7 to 10 days after the initial papule formation, a **painless** central black eschar will have formed

Laboratory and Diagnostic Testing:

Call the local department of public health and IDPH to inform the state of a possible anthrax exposure and to obtain additional instructions before testing.

Testing for cutaneous anthrax may include:

- 1) Swab exudates for gram stain and culture:
 - a) If vesicles are present, soak two dry, sterile synthetic-tipped swabs (e.g., dacron or rayon) in vesicular fluid from previously unopened vesicle.
 - b) If eschar is present, lift edge of eschar and rotate two swabs beneath the eschar without removing the eschar.
 - c) If no vesicle or eschar is present, swab the base of the ulcer with sterile, moist synthetic swabs.
- 2) Punch biopsy (full thickness) of lesion for histology, immunochemistry and polymerase chain reaction (PCR) tests. A second sterile specimen may be obtained for gram stain and culture if indicated.
- 3) 5 ml red-top tube for anthrax serology testing;  2 ml for pediatrics
- 4) 5 ml purple-top tube for PCR testing for CDC;  2 ml for pediatrics
- 5) Blood cultures from febrile or hospitalized patients

It is important to have diagnostic testing done before starting antibiotic treatment. Obtain specimens for culture **before** initiating antimicrobial therapy.

Treatment:

Standard isolation from contact with skin lesions.

(see tables, next page)

Table 1:

Treatment of cutaneous anthrax in patients *without* systemic signs, extensive edema or lesions located on head and neck. If any of the preceding occurs, go to Table 2.

Category	Initial Therapy (Oral)	Duration
Adults (including pregnant women and pregnant adolescents)	Ciprofloxacin 500 mg BID <i>or</i> Doxycycline 100 mg BID	60 days*
Children	Ciprofloxacin 10-15 mg/kg every 12 hrs (not to exceed 1 g/day) <i>or</i> Doxycycline: >8 yrs and >45 kg: 100 mg every 12 hrs All other children: 2.2 mg/kg every 12 hrs	60 days*
Immunocompromised individuals	Same for non-immunocompromised adults and children	60 days*

*Previous treatment guidelines for cutaneous anthrax suggested 7 to 10 days of therapy; however with the potential for bioterrorism, 60 days is recommended because of possible inhalational exposure.

Do **NOT** use extended-spectrum cephalosporins or trimethoprim/sulfamethoxazole because anthrax may be resistant to these drugs.

Table 2:

Treatment of cutaneous anthrax in patients *with* systemic signs, extensive edema or lesions on the head and neck.

Category	Initial Therapy (Oral)	Duration
Adults (including pregnant women and pregnant adolescents)	Ciprofloxacin 400 mg IV every 12 hrs <i>or</i> Doxycycline 100 mg IV every 12 hrs <i>and</i> <i>or</i> One or two additional antimicrobials*	IV treatment initially, switch to PO when clinically appropriate (see Table 1 for PO dosing). Treat for a total of 60 days (IV & PO combined).
Children	Ciprofloxacin 10-15 mg/kg every 12 hrs (not to exceed 1 g/day) <i>or</i> Doxycycline: >8 yrs and >45 kg: 100 mg every 12 hrs <i>and</i> One or two additional antimicrobials* All other children: 2.2 mg/kg every 12 hrs <i>and</i> One or two additional antimicrobials*	IV treatment initially, switch to PO when clinically appropriate (see Table 1 for PO dosing). Treat for a total of 60 days (IV & PO combined).
Immunocompromised individuals	Same for non-immunocompromised adults and children	Same for non-immunocompromised adults and children

*Additional antimicrobials include rifampin, vancomycin, penicillin, ampicillin, chloramphenicol, imipenem, clindamycin and clarithromycin.