

Clinical algorithm: clinical evaluation and management of drug users with possible anthrax

Anthrax infection suspected in a drug user

Any drug user who presents with:

- **Severe soft tissue infection**, including **possible necrotising fasciitis or cellulitis/abscess** particularly if associated with tissue oedema (often marked). This can present as a **compartment syndrome**
- **Signs of severe sepsis** even without evidence of soft tissue infection
- **Meningitis** (particularly haemorrhagic meningitis). Also be suspicious if drug users present/ have CT evidence suggestive of subarachnoid haemorrhage/intracranial bleed)
- Signs and symptoms of **inhalational anthrax**
 - Flu-like illness, progressing to severe respiratory difficulties and shock
 - Chest x-ray signs (pleural effusions, mediastinal widening, paratracheal fullness, hilar fullness, parenchymal infiltrates)
 - Progressively enlarging haemorrhagic pleural effusions are a consistent feature
- **Respiratory symptoms** may also be accompanied by signs and symptoms suggesting meningitis or intracranial bleeding in the rapidly advancing stages of the disease process due to haematogenous spread
- Cases of **disseminated anthrax whether 'injectional' or inhalational** may present with a variety of symptoms such as abdominal pain, nausea, vomiting, diarrhoea, gastrointestinal haemorrhage, ascites etc., suggestive of either GI involvement or actual gastrointestinal anthrax

NB A drug user may also present with the signs and symptoms of classical cutaneous anthrax (see algorithm: *Clinical evaluation and management of persons with possible cutaneous anthrax*). In the recent outbreak, the presentation has been one of mainly soft tissue sepsis rather than classical features of black eschar.

IS ANTHRAX STRONGLY SUSPECTED?

YES

NO

Anthrax unlikely:

- Observe Closely
- Investigate as appropriate
- Reassure
- Treat other conditions
- Reassess if necessary

DIAGNOSIS

Discuss immediately with Microbiology

Take initial diagnostic tests^{*1}:

- Blood cultures (**before** starting antibiotics, if possible)
- EDTA blood for PCR (**before** starting antibiotics, if possible)
- Tissue and/or material from lesion/abscess for **Gram stain and culture**
- Serum sample for **toxin/antibody testing**

Laboratories must handle specimens in CL3 if anthrax is suspected (see Laboratory guidance at http://www.hpa.org.uk/webc/HPAwebFile/HPAweb_C/1265296979282)

Local Laboratory to discuss with the Special Pathogens Reference Unit (SPRU) at HPA Porton (Tel: 01980 612100)

Notify Public Health Authorities as a possible case: Immediately contact local HPU/CCDC (who will coordinate collection of clinical and public health/exposure data) and HPA-CfI 24h duty doctor (020 8200 6868)

Inform Hospital Infection Control Team (Advice available at http://www.hpa.org.uk/webc/HPAwebFile/HPAweb_C/1267549743963)

TREATMENT

Refer to **Anthrax Clinical Guidance** section 4 for details on **Treatment of severe soft tissue infection in drug users**

- Timely surgical debridement (to remove dead or devitalised tissue and drainage of any abscess/collection) is the most important treatment - by removing the primary source of toxin production **BUT:**

- Start empiric antibiotic treatment to cover *B. anthracis* as well as other more common causes of severe soft tissue infections i.e.

Ciprofloxacin and clindamycin intravenously in combination with other antibiotics such as penicillin, flucloxacillin and metronidazole (i.e. a 5 drug combination).

- Treatment of disseminated anthrax without evidence of soft tissue infection e.g. inhalational anthrax including anthrax with meningeal involvement.

Ciprofloxacin and clindamycin intravenously in combination with at least one other active drug e.g. penicillin or vancomycin (in pen allergic); other agents with activity include **rifampicin, imipenem, meropenem, chloramphenicol and gentamicin**.

For details on duration of antimicrobial therapy, see **Anthrax Clinical Guidance**, section 4.4

Review diagnosis when test results are available

Review antimicrobial therapy based on clinical progress

* Gloves should be worn when microbiological specimens are taken. Samples should be labelled as 'High Risk' and handled according to local protocols. The microbiology laboratory should be notified of the suspected diagnosis and told to expect the sample.

¹ Microbiological specimens to local laboratory who will liaise as necessary with SPRU at Porton - **01980 612100**.

See also **Anthrax Clinical Guidance** at <http://www.hps.scot.nhs.uk/anthrax/documents/clinical-guidance-for-use-of-anthrax-immune-globulin-v12-1-2001-03-19.pdf>