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 the following should be considered as possible cases of anthrax:

- **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 a 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 could also present with the signs and symptoms of classical cutaneous anthrax (see separate 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**.
- **Local Laboratory should discuss with the Rare and Imported Pathogens Laboratory (RIPL))** at HPA Porton (Tel: 01980 612100)
- **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 http://www.documents.hps.scot.nhs.uk/giz/anthrax-outbreak/lab-guidance-investigation-anthrax-drug-users-v1-2010-01-18.pdf)
- **Notify Public Health Authorities** as a possible case: Inform **local Health Protection Team**
- Inform **Hospital Infection Control Team** (see http://www.documents.hps.scot.nhs.uk/giz/anthrax-outbreak/ic-management-anthrax-v0-7-2010-01-18.pdf

TREATMENT

Refer to ***Anthrax Clinical Guidance (ACG)*** (section 4) for details on ***Treatment of Severe Soft Tissue Infections in Drug Users***

- In severe soft tissue infections, 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 i.e. 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, imipemem, meropenem, chloramphenicol and gentamicin**.

For details on Duration of Antimicrobial Therapy: *see ACG,* section. 4.4.

Review diagnosis when test results are available

Review Antimicrobial Therapy based on clinical progress
(see *Anthrax Clinical Guidance (ACG),* section 4.4)
NB Anthrax Immune Globulin (AIG) is no longer available

** Gloves should be worn when microbiological specimens are taken. Samples should be labelled as "'High Risk' ? anthrax" 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 appropriate with RIPL, HPA Porton.

See also Anthrax Clinical Guidance (ACG) at http://www.documents.hps.scot.nhs.uk/giz/anthrax-outbreak/clinical-guidance-for-use-of-anthrax-immune-globulin-v12-1-2010-03-19.pdf