

Clinical evaluation and management of persons with possible inhalation anthrax

Health professional suspects inhalation anthrax (likelihood depends on threat level)

Features of inhalation anthrax:

- **Rapid onset of severe, un-explained febrile illness (fever, chills, fatigue, non-productive cough)**
- **Rapid onset of severe sepsis not due to a predisposing illness**
- **Abrupt onset respiratory failure and the presence of widened mediastinum or pleural effusions on chest x-ray**
- **Nausea**
- **Sweats (often drenching)**
- **Confusion or altered mental status**
- **Vomiting**
- **Pallor or cyanosis**
- **Raised red cell count**
- Dyspnoea
- Tachycardia
- Abdominal pain
- Pleuritic chest pain
- Sore throat

Take detailed exposure history:

- Details of all movements in the two weeks prior to onset of illness
- Ask specifically about risk factors:
 - Making, owning or playing animal hide drums
 - Injecting drug use (including use by smoking)
 - Travel
 - Working in postal sorting offices or handling large volumes of mail
 - Received threatening letter or package containing white powder

NO ← Patient has at least 5 features
OR
Patient has positive history of risk factors → **YES**

Inhalation anthrax unlikely:

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

Inhalation anthrax strongly suspected:

Notify Public Health Authorities:

- **Immediately contact** local HPU/CCDC and HPA-CfI 24h duty doctor (020 8200 6868)
- **Inform** Hospital Infection Control Team

Take initial diagnostic tests*¹:

- Chest X-ray: **Mediastinal Widening**, Pleural Effusion, Pulmonary Infiltrate
- FBC: to look for raised haemocrit, raised WCC, especially neutrophilia
- LFT: to look for high transaminases
- CT Chest if high suspicion and normal Chest X-ray
- Blood culture

Start antibiotic treatment to cover *B. anthracis*

Ciprofloxacin intravenously in combination with one or two other antibiotics (agents with *in vitro* activity include rifampicin, vancomycin, gentamicin, chloramphenicol, penicillin, amoxicillin, imipenem, meropenem and clindamycin) until sensitivity testing is available

Discuss further management with HPA-CfI and send further diagnostic tests if indicated*²:

- Further blood cultures
- Blood for PCR and serology (clotted samples)
- Nasal swabs
- CSF if meningeal signs present

Review diagnosis and therapy when test results are available

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

1 Microbiological specimens to local laboratory; if Gram-positive bacilli are isolated, or bacterial colonies are grown, these should be sent to the Reference laboratory.

2 Microbiological specimens to Reference laboratory.