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30 April 2010

Dear Doctor,

Anthrax outbreak among heroin users in Scotland, England and Germany

I write to draw your attention to an anthrax outbreak among heroin users in Scotland, England and Germany since December 2009. This outbreak was the first reported outbreak of anthrax to have occurred in conjunction with drug use.

As of 29 April, 36 cases were confirmed and 12 of them died in Scotland. Cases were also reported in England (3 cases as of March 1) and Germany (2 cases as of March 31). All cases reported a history of taking heroin by intramuscular, intravenous or subcutaneous injection and/or by other routes including smoking or snorting. According to the Health Protection Scotland, contaminated heroin or a contaminated cutting agent mixed with heroin was considered to be the most likely source and vehicle of infection. Further investigations are proceeding to try to trace the supply network and validate the hypothesis.

According to published information concerning this outbreak^{1,2}, the clinical presentation of the cases varied according to the way in which the heroin was taken. Generally, the cases began to present with inflammation or abscesses related to sites of heroin injection between one or two days or longer after injecting heroin. Admission to hospital generally followed within four days. Localised lesions developed into necrotising fasciitis in a number of cases, some of whom died. The fatal cases in Glasgow (three men and one woman) died between three and seven days after admission. Cellulitis with very marked soft tissue oedema has been noted in limbs with infection sites in a number of cases. Gastrointestinal symptoms occasionally predominated, probably reflecting disseminated disease. In a few cases the presentation has been of



¹ Booth MG, Hood J, Brooks TJG, Hart A. Anthrax infection in drug users. *Lancet*. 2010 Apr 17;375:1345-6

² Ramsay CN, Stirling A, Smith J, Hawkins G, Brooks T, Hood J, et al. An outbreak of infection with *Bacillus anthracis* in injecting drug users in Scotland. *Eurosurveillance*. 2010 Jan 14;15(2) <http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=19465>

patients in advance stages of systemic sepsis and some of whom died within hours. At least three cases presented with symptoms suggestive of sub-arachnoid haemorrhage or haemorrhagic meningitis at initial assessment. Haematology and biochemistry findings were non-specific. The white-cell count, C-reactive protein and lactate were typically not grossly abnormal. A decline in platelet count may predict clinical deterioration, even if within the normal range.

There has been no evidence of person to person transmission or increased risk to the families, friends or other associates of the affected patients or to the general public so the risk to the general non-heroin users are considered to be low.

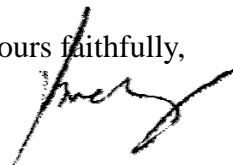
Anthrax infection is an acute bacterial infection caused by the spore-forming bacterium *Bacillus anthracis*. The dormant spores can resist adverse environmental condition and disinfections and may remain viable in contaminated soil for years. Diagnosis is by demonstration of *Bacillus anthracis* in a clinical specimen through microscopic examination of stained smears, culture or PCR testing. The pathogen is susceptible to antibiotics such as penicillin, doxycycline and fluroquinolones and anthrax can be cured if treatment is started at an early stage.

In Hong Kong, anthrax is a statutory notifiable disease and notification of suspected or confirmed cases of anthrax is required by law. Anthrax infection is very rare in Hong Kong. There have been four cases reported in the past 20 years and two of them died. None were heroin users. DH has recorded no case since 2003.

You may wish to visit the website of Health Protection Scotland (<http://www.hps.scot.nhs.uk/anthrax/index.aspx>) for further information concerning the outbreak in Scotland.

If you suspect anthrax infection in a heroin user, you should report to the Central Notification Office (call 2477 2772, fax to 2477 2770, or through CENO On-line at <https://ceno.chp.gov.hk>). In view of the public health importance of this disease, please call the Medical Control Officer at 7116 3300 a/c 9179 for prompt investigation outside office hours.

Yours faithfully,



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