

Multiple Allergic Reactions Following Mass Antibiotic Chemoprophylaxis

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Background:

In the course of one week the regional Department of Public Health Medicine was notified about three cases of invasive meningococcal disease in students of the local Institute of Technology, a third level college with about 4,000 students. An outbreak was declared and a decision was made to dispense chemoprophylaxis to all students and staff. A single dose of Ciprofloxacin was chosen as the most appropriate chemoprophylaxis in this population because:

- Used successfully in similar outbreaks elsewhere
- Does not interact with oral contraceptives
- Single dose
- Improve Compliance^(2,3)

Methods:

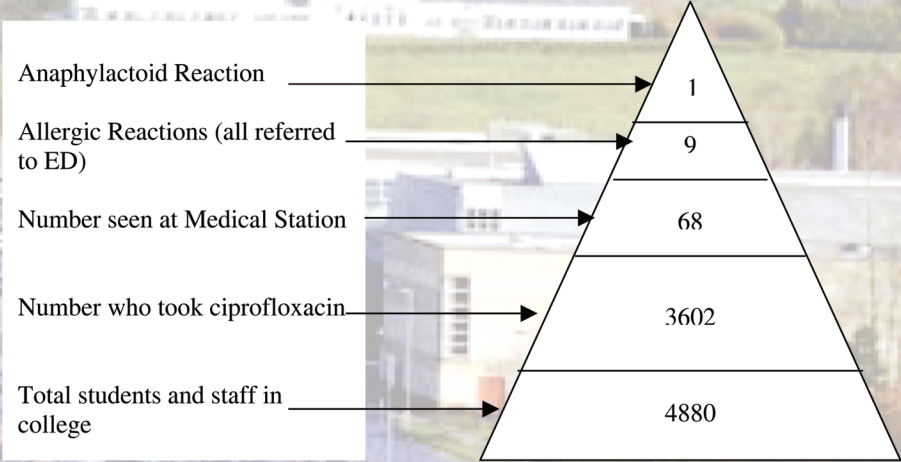
A single 500mg dose of Ciprofloxacin was administered to 3,602 contacts at a single venue on campus in the three days following the declaration of the outbreak. A Medical Station was set up at this venue and for the vast majority of college staff and students this was the most accessible medical expertise. The medical station was cordoned off at the venue to assess those who presented with symptoms. People mainly presented with either possible adverse reactions to the Ciprofloxacin or with concerns of suspected meningitis. This medical station was manned by Public Health Physicians. The arrangement of this station was re-thought after the first day because it was put under more pressure than had been expected when it was originally planned.

The following steps were taken to inform and advise the public and those at the first point of care:

- A press statement was prepared and released to the press through the media officer for the local Health Board.
- A Consultant in Public Health Medicine was nominated as the media spokesperson.
- A help-line was organised to deal with queries from the general public. The log of calls to the help-line identified the main concerns that the general public had:
 - o Am I a contact?
 - o Does a contact pose a risk to other members of the household? -no
 - o Is it safe to go to the college now? – yes
 - o Is chemoprophylaxis free?
- All staff and students at the college were informed by email. Also, when a person attended the Medical Station to get chemoprophylaxis, they were given an information leaflet.
- Letters were prepared and circulated to all local general practitioners
- There was close liaison between the Department of Public Health Medicine and the local Emergency Department.

Results:

The medical station dealt with 68 patients. Nine patients were documented to have had an adverse reaction to Ciprofloxacin. One patient had a severe anaphylactoid reaction requiring treatment with epinephrine and hospital admission. Seven patients were treated with Steroids and Anti-histamines and allowed home after a period of observation in the Emergency Department.



Discussion:

Mass antibiotic chemoprophylaxis is a large scale Public Health exercise and can be associated with a significant rate of serious adverse events.⁽¹⁾ This has the potential to impact on the workload of Emergency Departments where larger populations receive chemoprophylaxis.

An outbreak of meningitis causes a high level of anxiety in the community and this anxiety often leads people to seek reassurance and unnecessary treatment from primary care and the local Emergency Department - “the worried well”. In this instance the Emergency Department was largely unaffected and only treated 9 people who presented with complaints that were specifically related to chemoprophylaxis.

Population chemoprophylaxis may also arise in the context of potential pandemics or bioterrorist attack. For example, Ciprofloxacin is currently recommended as first line post-exposure prophylaxis for Anthrax. In these situations much larger numbers may be involved and Public Health Units and Emergency Planners must consider the rates of adverse reactions associated with mass chemoprophylaxis and the likely number of patients requiring treatment. Also, the rate may not be known for some chemoprophylactic agents. Emergency Departments must be aware of these developments and may see significant numbers of patients with allergic adverse reactions following population chemoprophylaxis. The deployment of physicians trained in Immediate Care in the Medical Station at the dispensing venue should also be considered.



References:

1. Drug points: Allergy associated with ciprofloxacin, Burke P and Burne SR, BMJ 2000; 320; 679-684
2. Guidelines for the public health management of meningococcal disease in the UK published in Communicable Disease and Public Health, September 2002 Vol5 No 3 by the Public Health Laboratory Service, UK.
3. CDSC. Ciprofloxacin as a chemoprophylactic agent for meningococcal disease – low risk of anaphylactoid reactions. Commun Dis Rep Weekly 2001; 11(1).

