Investigation of the uptake of chemoprophylaxis by contacts of cases of meningococcal disease in the North East of England

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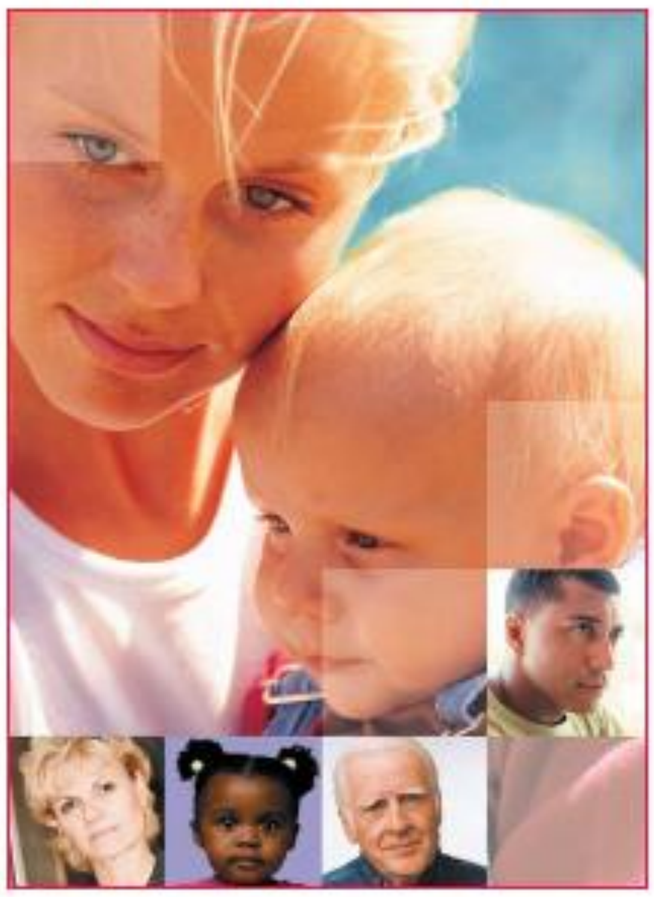
Meningitis Research Foundation

Am I At Risk?
Meningitis and septicaemia



Background

Neisseria meningitidis is a normal inhabitant of the human nasopharynx, which can be transmitted person to person by droplets or secretions from the respiratory tract. Meningococci are carried by approximately 10% of the population, varying from 2% in children under five years to 25% in those aged 15 - 19 years. Increased carriage rates have been seen in overcrowded households, military recruits and smokers. It is unknown why some people carry the bacteria without harm and others go on to develop disease. Preceding influenza A infection is considered a risk factor.

Systemic immunity usually develops within 14 days of acquisition of meningococci. Rarely, acquisition may progress to invasive disease before immunity develops. The risk of invasive disease following acquisition varies with characteristics of the strain acquired, environmental and host factors. Most cases of invasive disease are caused by a small proportion of carried strains.

Approximately 97% of cases are sporadic. The risk to contacts is low, however the highest risk is to people who live in the same household as the case. If prophylaxis is not given, the absolute risk to the contact from one to thirty days after onset of illness in the index case is 1:300. It is highest in the first seven days and decreases rapidly over the next 30 days. The incubation period is commonly three to five days and as the highest risk of illness in untreated households is seen in the first 48 hours after onset in the index case, the source of infection in further cases is probably from the same/another carrier and NOT from the index case.

Aim

To investigate the uptake of antibiotic chemoprophylaxis by contacts of cases of meningococcal disease, including:

- **Timeliness of receipt of the prescription**
- **Ease of access to the medication**
- **Compliance with advice given**
- **Recommendations to improve uptake.**

Method

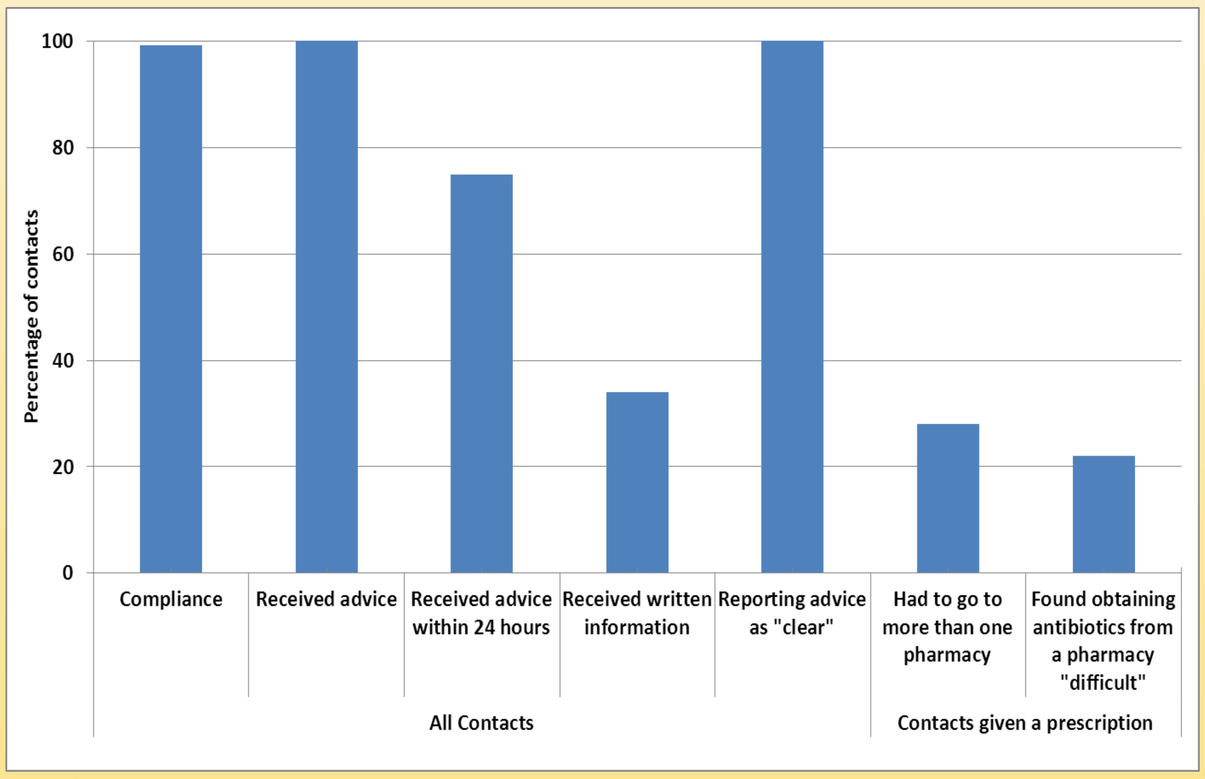
A retrospective audit was undertaken involving a cohort of contacts of meningococcal cases in the North East of England which occurred from 1 January to 31 March 2011. Contacts of the two cases who had died were excluded.

A questionnaire was designed based on current North East Health Protection Unit (NEHPU) and national guidelines. The questions were tick box or scales with minimal free text. A final open ended question asked if there was anything else the respondent would like to say about the advice given or getting the antibiotics.

The cases and contacts were identified from the NEHPU case management data base.

The questionnaire was administered by telephone by an experienced Health Protection Nurse. Some telephone interviews were carried out during evenings and weekends to ensure the best possible response rate.

Figure 1: Compliance and associated factors



"Amazing! Excellent advice from the HPA and hospital staff. Very grateful to all staff who offered advice and support. Got information in the post."

"All questions asked were answered by the HPA and hospital doctor. No problem obtaining medication, however did have to pay which was costly."

"Had to register with a GP as a temporary resident as I'm a student at Glasgow university. Had to go to the pharmacy twice to get medication as there wasn't enough. A bit frustrating!"

"Satisfactory advice given by the HPA, but had to go to four pharmacies with prescription issued by the hospital. This was not satisfactory."

Results

- All persons contacted agreed to participate.
- Of 28 cases, there were 130 contacts with an average of 4.6 contacts per case.
- Compliance was 99.23%, therefore analysis of non-compliance was not possible due to small numbers.
- 100% of contacts were given verbal advice regarding chemoprophylaxis, 75% received this advice within 24 hours of the index case being diagnosed. 25% were given advice later than 24 hours due to delayed notification of the index case to the HPU by the treating clinician.
- 100% reported having a clear understanding of the reason they were being asked to take antibiotics i.e. to clear carriage as opposed to treating disease.
- 34% of contacts received written information about the antibiotics and a Meningitis Research Foundation leaflet detailing signs and symptoms of meningococcal disease.
- 48% of contacts were given ***antibiotics*** by the hospital ward where the index case was being treated.
- Of the remaining 52% of contacts issued with a ***prescription***, 75% received this from a GP and 23% from a hospital doctor.
- 28% of those given a prescription had to go to more than one community pharmacy but reported no difficulties; 22% reported obtaining the antibiotics from a community pharmacy as " difficult", in some instances having to visit three pharmacies.
- Responses to the open ended question, 'Is there anything else you would like to tell us about the advice or getting antibiotics?', indicated:
  - a high level of satisfaction with the advice and support given by the North East Health Protection Unit
  - a high level of satisfaction with access to antibiotics when provided by the hospital ward
  - a degree of dissatisfaction when contacts reported having to visit more than one community pharmacy to obtain antibiotics. This did not however affect compliance.

Conclusions

In March 2011, the national guidance on chemoprophylaxis changed recommending a single dose of ciprofloxacin in preference to a two day course of rifampicin. It is expected that this may resolve the issues of community pharmacies not having enough rifampicin in stock.

Compliance was unexpectedly high in this audit but access to antibiotics was reported as easier when these were directly issued on the ward rather than by prescription. Difficulty in obtaining antibiotics from community pharmacies resulted in expressions of dissatisfaction, although this did not affect compliance.

Recommendations

The HPU will use this audit to encourage hospital clinicians to notify cases immediately to the HPU and where possible to provide chemoprophylaxis on the ward to household contacts.

The NEHPU will improve provision of written materials to reiterate the verbal advice and information given during the initial public health risk assessment, raise awareness of the signs and symptoms of meningococcal disease and encourage vigilance.

As part of the public health risk assessment, contacts will be told to telephone the community pharmacy in advance to check that the antibiotics are in stock.

References

HPA, Feb 2011. *Guidance for public health management of meningococcal disease in the UK:* Health Protection Agency Meningococcus Forum. [online] Available at http://www.hpa.org.uk/Topics/InfectiousDiseases/InfectionsAZ/MeningococcalDisease/Guidelines/ [accessed 26 October 2011].