

Meningococcal Disease: Information for Health Care Providers

What are the signs and symptoms of meningococcal disease?

Neisseria meningitidis (N. meningitidis) is a bacterium that can cause the sudden onset of fever, intense headache, nausea, vomiting, stiff neck and a petechial rash. It occurs most frequently in children under one year of age but recent infections have been occurring in adolescents and adults. Case fatality rates of up to 10% have been reported. The incubation period is 2 to 10 days, most commonly 3 to 4 days.

How is neisseria meningitidis spread?

N. meningitidis is carried in the nose and throat. It is estimated that 10% of the population carry N. meningitidis in their nose and throat without any symptoms. Infection is spread by close contact through droplets. Methods of transmission include activities where saliva is exchanged such as kissing or sharing of food, cutlery, drinks, water bottles, lipstick, toothbrushes, musical instrument mouth pieces, mouth guards, or cigarettes.

How is neisseria meningitidis diagnosed?

Diagnosis requires identification of clinical features compatible with meningococcal disease and laboratory confirmation of infection through isolation of N. meningitidis from a normally sterile site (blood, cerebrospinal fluid [CSF], joint, pleural or pericardial fluid). Demonstration of N. meningitidis antigen in CSF is also acceptable. PCR can distinguish serogroups A, B, C, Y and W-135 meningococci in whole blood, CSF or fluids from other normally sterile sites. PCR is more sensitive than culture, especially if antibiotics have already been started.

Who is defined as a close contact of a case?

A close contact is someone who is likely to have had contact with the oral or nasal secretions of a person with meningococcal disease. Exposure can only result in transmission if it occurred seven days or less before the person became ill and up to one day after the ill person began treatment. Close contacts are defined as those who:

- Live in the same house as the ill person;
- Share sleeping arrangements with the ill person;
- Children and staff in the same day care or nursery school as the ill person;
- Those who have kissed the ill person or shared items with the ill person such as: food, cutlery, drinks, water bottles, lipstick, cigarettes, mouth guards, toothbrushes, or musical instrument mouthpieces;

- Health care workers who have had intensive unprotected contact (not wearing a mask) with infected patients (i.e. during intubation, resuscitation or closely examining the oropharynx).
- Airline passengers sitting immediately on either side of the case (but not across the aisle) when the total time spent on board the aircraft was at least 8 hours.

In general, classroom, workplace and social contacts are not considered close contacts, therefore they do not require prophylaxis.

The risk of infection among household contacts is 500 to 800 times greater than the risk to the general population. Close contacts should receive prophylaxis as soon as possible preferably within 24 hours of the case being identified and within 14 days after exposure to the ill person. They should contact a physician immediately if they become sick with symptoms suggestive of meningococcal disease.

What medications are prescribed for prophylaxis of close contacts?

One of three antibiotics can be used to prevent meningococcal disease in close contacts: ciprofloxacin, rifampin or ceftriaxone.

- **Ciprofloxacin** can be used by adults. Only one 500 mg oral dose is required. **It should not be used in children less than 18 years of age, prepubescent children, pregnant women or women who are breastfeeding.**
- **Rifampin** can be used in children, adolescents and adults. It is given every 12 hours for four doses. For adults the recommended dosage is 600 mg per dose. For children one month of age and older the recommended dose is 10mg/kg per dose to a maximum of 600 mg per dose. In children less than one month of age, 5mg/kg per dose should be used.

Individuals taking rifampin should be informed their urine, tears, saliva, sputum, sweat and feces can turn red while on the medication. Soft contact lenses should not be worn since they will be stained. Rifampin may also decrease the efficacy of the birth control pill so a back-up method of contraception should be used during that package of birth control pills. **Rifampin should NOT be used in pregnancy.**

- **Ceftriaxone** is given as a single intramuscular injection of 250 mg for people 15 years of age and older. It is the drug of choice during pregnancy. If used in children under 15 years of age, the dose is 125 mg IM. Ceftriaxone should be diluted with 1% lidocaine to reduce pain at the injection site.

Refer to Appendix A: Disease-Specific Chapter: Meningococcal disease, invasive of the Infectious Disease Protocol for more information regarding prophylaxis recommendations.

(http://www.health.gov.on.ca/en/pro/programs/publichealth/oph_standards/docs/meningococcal_chapter.pdf)

Who should be vaccinated against meningococcal disease?

Close contacts of a person with meningococcal disease are offered vaccination if the ill person has a vaccine preventable strain of meningococcal disease (types A,B,C,Y or W-135).

Since 2005, children who are one year of age, adolescents in grade seven and high school students have been routinely vaccinated against serogroup C meningococcal disease. In September, 2009, protection for adolescents in grade seven was expanded to include meningococcal serogroups A, C, Y and W135.

Vaccination against serogroups A, C, Y and W135 should be provided to people with no spleen or whose spleen does not work properly, travelers to certain countries including those going to the Hajj in Saudi Arabia, some laboratory workers, members of the military and some individuals who have problems with their immune system.

Vaccination to protect against serogroup B meningococcal disease has been licensed for use in people two months to 17 years of age and is available by prescription. However, it is free for people between two months and 17 years of age who have a high risk condition such as functional or anatomic asplenia, complement, properdin, factor D or primary antibody deficiencies; cochlear implant recipients; acquired complement deficiencies and HIV.

If you have any questions or concerns, please contact the Infectious Disease Control Team at 519-663-5317 ext. 2330 or go to www.healthunit.com

References:

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Date of Creation: December 8, 2012

Last Modified on: May 5, 2015