

MENINGOCOCCAL DISEASE

Department of Human Services, Division of Disease Control--207-287-5301, 1-800-821-5821

Meningococcal disease results from an infection with *Neisseria meningitidis*, a gram negative bacteria. It can result in meningitis, which is an inflammation of the tissues surrounding the brain and spinal cord, or in meningococemia, the presence of the bacteria in the blood.

Neisseria meningitidis is transmitted through direct contact with respiratory droplet secretions from the nose or pharynx of infected persons. Intimate face to face contact (kissing, sneezing, coughing) is usually required to transmit the agent. Transmission does not result from contact with inanimate surfaces or from food. Infection normally causes only a mild pharyngitis or asymptomatic colonization.

Asymptomatic infection with “*N. meningitidis*” is common. The organism can be found on throat culture in approximately 10% of healthy persons. Performing throat cultures on well individuals is not usually a helpful diagnostic or public health measure. Despite widespread colonization, invasive disease is quite rare. This low occurrence of disease suggests that a person’s own immune system, in addition to bacterial factors, plays a role in disease development.

Meningococcal meningitis is usually characterized by the acute onset of fever and intense headache, which is often accompanied by nausea and vomiting, stiff neck, and a petechial rash. It cannot be differentiated from other types of bacterial meningitis without laboratory evaluation. Changes in mental status from lethargy to delirium and coma may develop rapidly and shock may be present. Meningococemia without meningitis may present with high fever, sudden prostration, and petechial rash. Such a rash may begin as a flat red rash which evolves into small dots which do not change with pressure. Diagnosis may be confirmed by the demonstration of typical organisms in the gram-stained smear of spinal fluid and the recovery of meningococci by culture of spinal fluid, blood, and scrapings from the petechial skin rash. The incubation period ranges from 2 to 10 days and is usually 3 to 4 days.

Susceptibility to the clinical disease is low and decreases with age. Attack rates are highest in children under age 5 and lowest in adults.

Anti-microbial prophylaxis should be offered as soon as possible to the intimate contacts of patients with invasive disease: sexual partners, household members, and individuals who shared eating utensils or beverages. Prophylaxis should also be offered to nursery school and daycare contacts if a case occurs in these settings. Health care personnel are rarely at risk of infection, unless they are exposed to nasopharyngeal secretions, as during mouth to mouth resuscitation.

Most meningococcal disease occurs as sporadic or single cases, but clusters of cases occasionally occur in children and young adults. When clusters of cases occur, in some instances meningococcal vaccination is recommended for the group at risk. The BOH is

available for consultation on the appropriateness of vaccination. Because it takes up to 2 weeks for protection to develop after vaccination, direct contacts of cases also must receive prophylaxis to decrease the risk of early disease even if they are being vaccinated. The BOH should be notified immediately.

Nancy Dube
School Nurse Consultant
Department of Education
624-6694/Nancy.Dube@maine.gov