Meningitis

What is meningitis?

- An infectious disease causing swelling or inflammation of the tissue covering the spinal cord and brain.
- Three types of bacteria most commonly cause bacterial meningitis in young children after the newborn period.
  - *Neisseria meningitidis* (meningococcus)
  - *Streptococcus pneumoniae* (pneumococcus)
  - *Haemophilus influenzae* type b (Hib)
- With current immunizations, meningitis from these bacteria is rare.
- Most meningitis is caused by viruses. Although most cases of viral meningitis resolve without antimicrobial treatment or complications, they can be confused with bacterial meningitis in early stages.
- Viral meningitis typically occurs during summer and early fall in temperate climates.

What are the signs or symptoms?

- Fever (may be associated with a blood-red rash of meningococcus)
- Headache
- Nausea
- Loss of appetite
- Sometimes, a stiff neck (ie, pain or discomfort when trying to touch the chin to the chest; child is unwilling to bend head forward enough to look at her or his belly button)
- Irritability
- Photophobia (ie, eye discomfort when looking into bright lights)
- Confusion
- Drowsiness
- Seizures
- Coma

What are the incubation and contagious periods?

- Incubation period
  - For the most common cause of viral meningitis (enterovirus): 1 to 10 days, usually less than 4 days
  - For Hib: Unknown
  - For meningococcus and pneumococcus: 1 to 10 days
- Contagious period

AAP

Skin lesions of early meningococcemia

AAP

Meningococcemia showing striking involvement of the extremities

  - For enterovirus viral meningitis: Shedding of the virus in feces can continue for several weeks, but shedding from the respiratory tract usually lasts a week or less.
  - For Hib, meningococcus, and *S pneumoniae*: Until after 24 hours of antibiotics.

How is it spread?

- Contact with the respiratory secretions from or objects contaminated by children who carry these germs, such as sharing of food utensils and drinking vessels (meningococcus, Hib).
- Fecal-oral route (enterovirus): Contact with feces of children who are infected. This generally involves an infected child contaminating their own fingers and then touching an object that another child touches. The child who touched the contaminated surface then puts their fingers into their own mouth or another person's mouth.

How do you control it?

- Bacterial meningitis
  - Immunizations according to the latest schedule.
  - Preventive antibiotics may be indicated for close contacts.
  - Vaccinate unimmunized or under-immunized children as indicated by the local health department.
- Viral meningitis
  - Use good hand-hygiene technique at all the times listed in Chapter 2 and other routine infection control measures in Chapter 2.
  - Recommended immunizations prevent some viral meningitis in the United States from polio, measles, mumps, and chickenpox (varicella). However, these vaccine-preventable diseases are not common causes of viral meningitis.

What are the roles of the educator and the family?

- Report the infection to the staff member designated by the early childhood education program or school for decision-making and action related to care of ill children. That person, in turn, alerts possibly exposed family and staff members to watch for symptoms.
- In communication with health professionals and parents/guardians, distinguish between viral and bacterial meningitis, which may be important in determining which close contacts need additional management.
- If it is bacterial meningitis, report the infection to the local health department. If the health professional who makes the diagnosis does not inform the local health department that the infected child is a participant in an early childhood education program or school, this could delay controlling the spread of some types of meningitis. Preventive antibiotic treatment may be appropriate for children who have been in contact with the ill child. Involve the Child Care Health Consultant.
- Prevent contact with respiratory secretions. Teach children and educators to cover their noses and mouths when sneezing or coughing with a disposable facial tissue, if possible, or with an upper sleeve or elbow if no facial tissue is available in time. Teach everyone to remove any mucus or debris on skin or other surfaces and perform hand hygiene right after using facial tissues or having contact with mucus to prevent the spread of disease by contaminated hands. Change or cover clothing with mucus on it.
- Dispose of facial tissues that contain nasal secretions after each use.
- Use good hand-hygiene technique at all the times listed in Chapter 2.

Exclude from educational setting?

Yes, as soon as it is suspected.

Readmit to educational setting?

Yes, when all the following criteria are met:

- When the child is cleared to return by a pediatric health professional
- When the child is able to participate and staff members determine they can care for the child without compromising their ability to care for the health and safety of the other children in the group

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