

Tikrit University

College of Nursing

Clinical Nursing Sciences



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Child Health Nursing



(Meningitis)

by:

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Meningitis

1. inflammation of meninges,
2. most common infectious process of the CNS.
3. bacterial or viral

Meningitis

1. Primary disease or
2. Secondary
Complications of neurosurgery
Trauma,
Systemic infection,
Sinus infections
Ear infections

Etiology

1. H. influenzae type b (Most common cause of meningitis in children older than age 1 month.
2. Neisseria meningitidis
3. Streptococcus pneumoniae are common bacterial causes of meningitis.

Bacteria reach the meninges via

1. Bloodstream from nearby infections (Sinusitis, mastoiditis, otitis media) or
2. Communication of CSF (an excellent medium for bacterial growth).

Clinical manifestation among infants and toddlers include:

1. fever
2. change in feeding pattern
3. vomiting or diarrhea
4. bulging anterior fontanel
5. irritability
6. high-pitched cry
7. seizures
8. lethargy
9. confusion

10. muscle or joint pain

11. headache

Child with common neurological disorders

1. photophobia
2. nuchal rigidity (resistance to neck flexion)
3. opisthotonos (hyperextension of the head and neck to relieve discomfort)
4. seizures
5. coma
6. positive Kernig's or Brudzinski's sign, or both.

Kernig signs (flexion of the hip to 90 degree with subsequent pain on extension of the leg)

Diagnostic tests:

- ❖ Lumbar puncture (CSF assessment for
 1. protein
 2. glucose levels
 3. Number of WBCs.
 4. The fluid may appear cloudy or milky white.
 5. CSF protein levels tend to be high; glucose levels may be low.
- ❖ CT scan or MRI
- ❖ Blood cultures
- ❖ Complete blood count (CBC)
- ❖ Serum electrolytes and osmolality
- ❖ Clotting factors
- ❖ Nose and throat cultures.

Complications

1. Hearing loss
2. Neurologic deficit,
3. Seizures,
4. Visual impairment,
5. Behavioral problems.

6. CN dysfunction,
7. brain abscess,
8. syndrome of inappropriate antidiuretic hormone (SIADH).
9. Death occurs in 10% to 15% of cases.

Treatment of bacterial includes the following:

1. Two broad spectrum antibiotics.
2. Blood culture and sensitivity.
3. dexamethasone (Decadron) reduce risk of sequelae like hearing loss and neurologic complications.
4. Isolation of the child to prevent spreading the infection.
5. Medications to control fever and pain/discomfort.

Treatment for viral (aseptic) meningitis is

1. supportive;
2. medications like analgesics

Nursing interventions include:

1. Assess child's Neurological status and vital signs every 2 to 4 hour
2. Assess the patient for headaches, hearing loss, seizure, change in food and fluid intake.
3. Assess peaks of antibiotic levels to prevent ototoxicity.
4. Educate family on meningitis complications and medications
5. Control of pain by comfortable position and quiet environment,
6. Control of seizure
7. Help child and family during lumbar puncture procedure

Signs of Meningeal Irritation



Opisthotonos.



Assessing for Kernig's sign.



Assessing for Brudzinksi's sign.

Meningeal irritation signs

<p>Meningeal symptoms (complex):</p> <ol style="list-style-type: none"> 1. Headache 2. Vomiting 3. Consciousness disorders 4. Total hyperesthesia 5. Meningeal symptoms: (Kernig's sign, nuchal rigidity, and meningeal pose) 6. Seizures 	<p>Meningeal pose</p>
<p>Meningococemia Hemorrhagic exanthema <i>(Testing of nuchal rigidity)</i></p>	<p>Testing of Kernig's sign</p>

Signs & symptoms of meningitis