

MENINGITIS

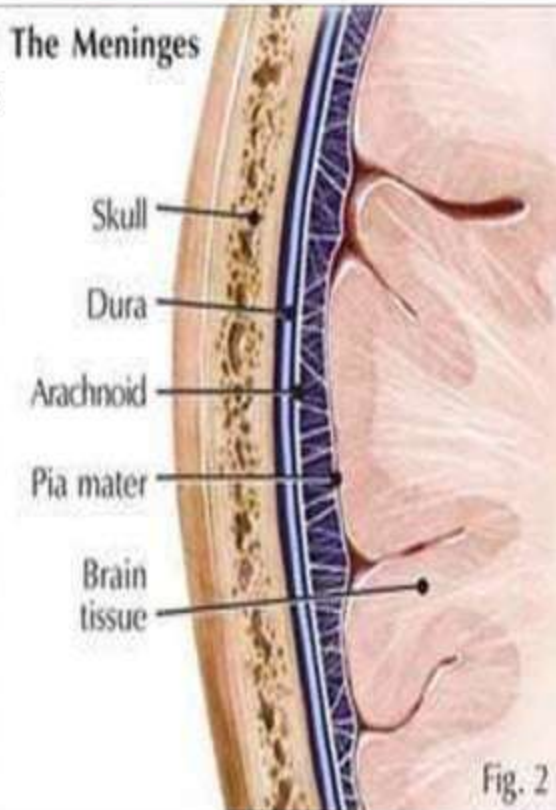
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MENINGES

The meninges is the system of membranes which envelops the central nervous system. It has 3 layers:

1. Dura mater
2. Arachnoid mater
3. Pia mater

Subarachnoid space - is the space which exists between the arachnoid and the pia mater, which is filled with cerebrospinal fluid.



INTRODUCTION

- Meningitis is a disease caused by the inflammation of the protective membranes covering the brain and spinal cord known as the meninges.
- The inflammation is usually caused by an infection of the fluid surrounding the brain and spinal cord.
- Meningitis can be life-threatening because of the inflammation's proximity to the brain and spinal cord; therefore the condition is classified as a medical emergency.

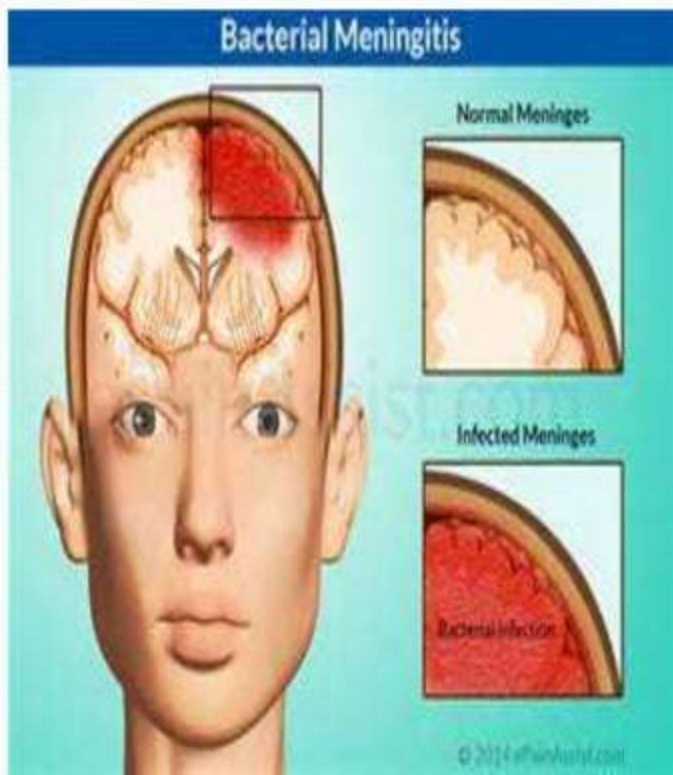
CLASSIFICATION

Depending upon etiology, Meningitis is of 3 types.

- a. Bacterial (pyogenic) Meningitis
- b. Viral (Aseptic) Meningitis
- c. Tuberculosis Meningitis

BACTERIAL MENINGITIS

- It is the inflammation of meninges due to bacterial infections.
- It is most common form of Meningitis.



AETIOLOGY

- Haemophilus Influnza type B (HiB)
- Neisseria Meningitidis
- Streptococcus Pneumoniae
- Escherichia Coli
- Group B Streptococci
- Mycobacterium Tuberculi

RISK FACTORS

- Close contact with infected person
- Infrequent hand washing.
- Lack of vaccination
- Living to dormitory
- Weak immune system
- Age (common in under 20 age)

CLINICAL FEATURES



A
Kerning's signs



B
Brudzinski sign





IN NEONATES

- **Feeds** poorly or refuse
- Unstable temperature
- Vomiting
- Stiffness in a baby's body and neck
- Bulging fontanel
- Irritability
- Excessive cry
- Tremor or convulsion

IN INFANT TO 2 YEARS OF AGE

- Sudden high fever
- Stiff neck (Nuchal sign)
- Seizures
- Photophobia
- Sign of ICP raised (headache, vomiting without nausea, altered level of consciousness, papilloedema, raised SBP, bradycardia, abnormal respiratory pattern)
- Irritability and lethargy
- High pitched cry

DIAGNOSTIC EVALUATION

- History and physical examination
- Lumbar puncture and CSF analysis (which shows a low glucose along with an increased WBC and increased protein)
- Lab investigation : CBC Blood culture and sensitivity test
- Imaging: MRI or CT scans of the head may shows swelling or inflammation
- X-ray or CT scans of the chest or sinuses may shows infection

THERAPEUTIC MANAGEMENT

- ❑ Initiation of antimicrobial therapy
- ❑ Give corticosteroid to decrease cerebral and cranial nerve inflammation
- ❑ Treat for ICP
- ❑ Maintenance of ventilation
- ❑ Maintenance of hydration
- ❑ Control of seizures
- ❑ Supportive therapy
 - Maintain position
 - Elevation of head of bed at 30

Contd...

- Antipyretic and tepid sponging for fever
- Iv fluid to maintain fluid and electrolyte balance
- Bowel and bladder care
- Treatment of complications

VIRAL MENINGITIS

- It is inflammation of meninges due to viral infections
- It is also known as aseptic meningitis.
- Although the viral meningitis is common cause of meningitis is usually less than bacterial origin.

COMMON VIRUSES

- Enteroviruses (Polio)
- Mumps virus
- Herpex simplex
- Varicella zoster viruses

CLINICAL FEATURES

- Acute onset of sev. Headache with high grade fever
- Drowsiness
- Photophobia
- General weakness
- Stiff neck
- Influenza, diarrhea
- Other are similar to bacterial meningitis



DIAGNOSTIC EVALUATION

- History taking
- Physical examination
- Lumbar puncture

TREATMENT

- Antibiotics can't cure viral meningitis. treatment of mild viral meningitis includes;
- Provide complete rest
- Maintain hydration
- Give antipyretics and anti inflammatory
- Iv antibiotics should be administered promptly if bacterial meningitis is suspected.

ANY QUESTIONS



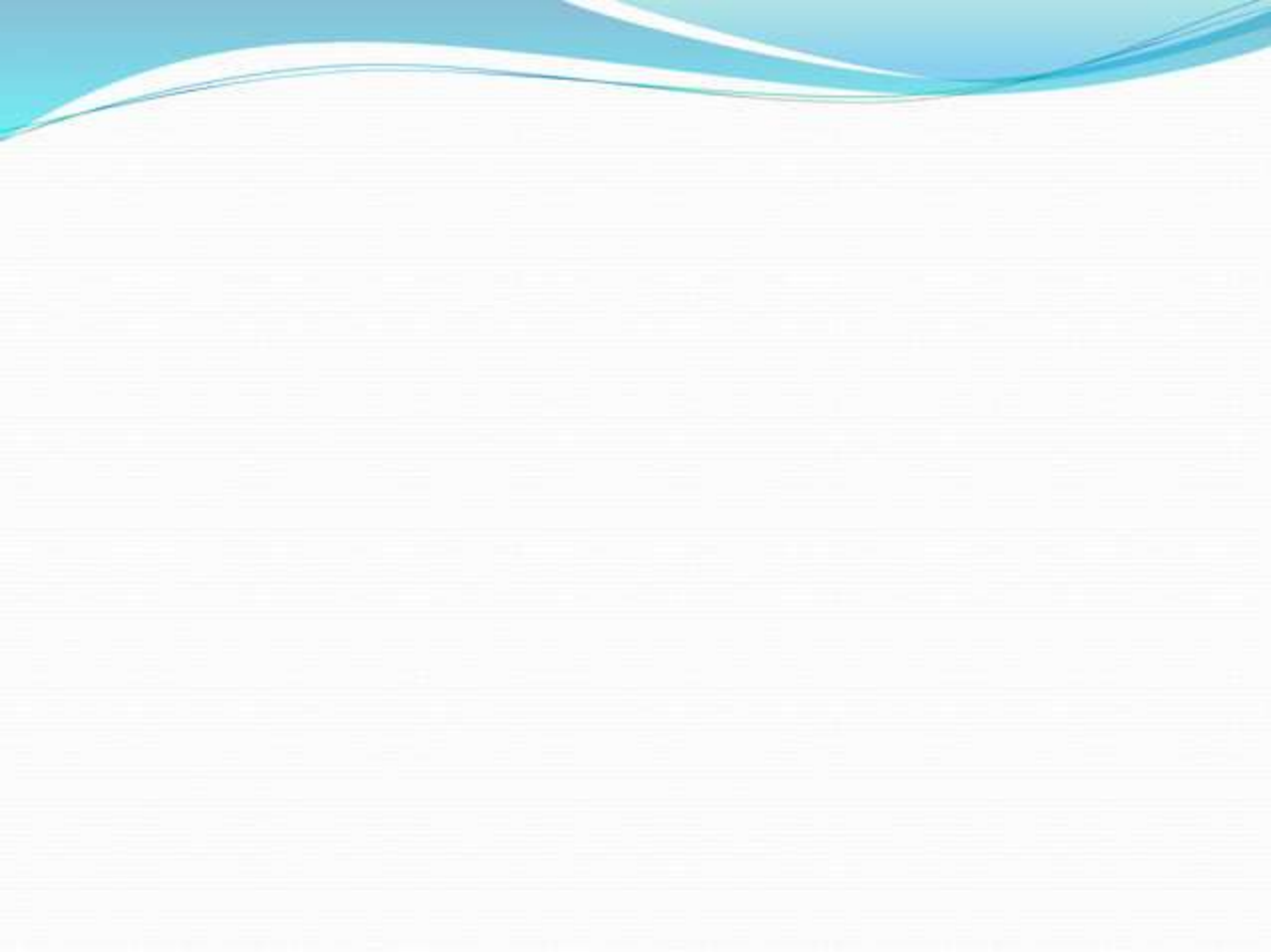


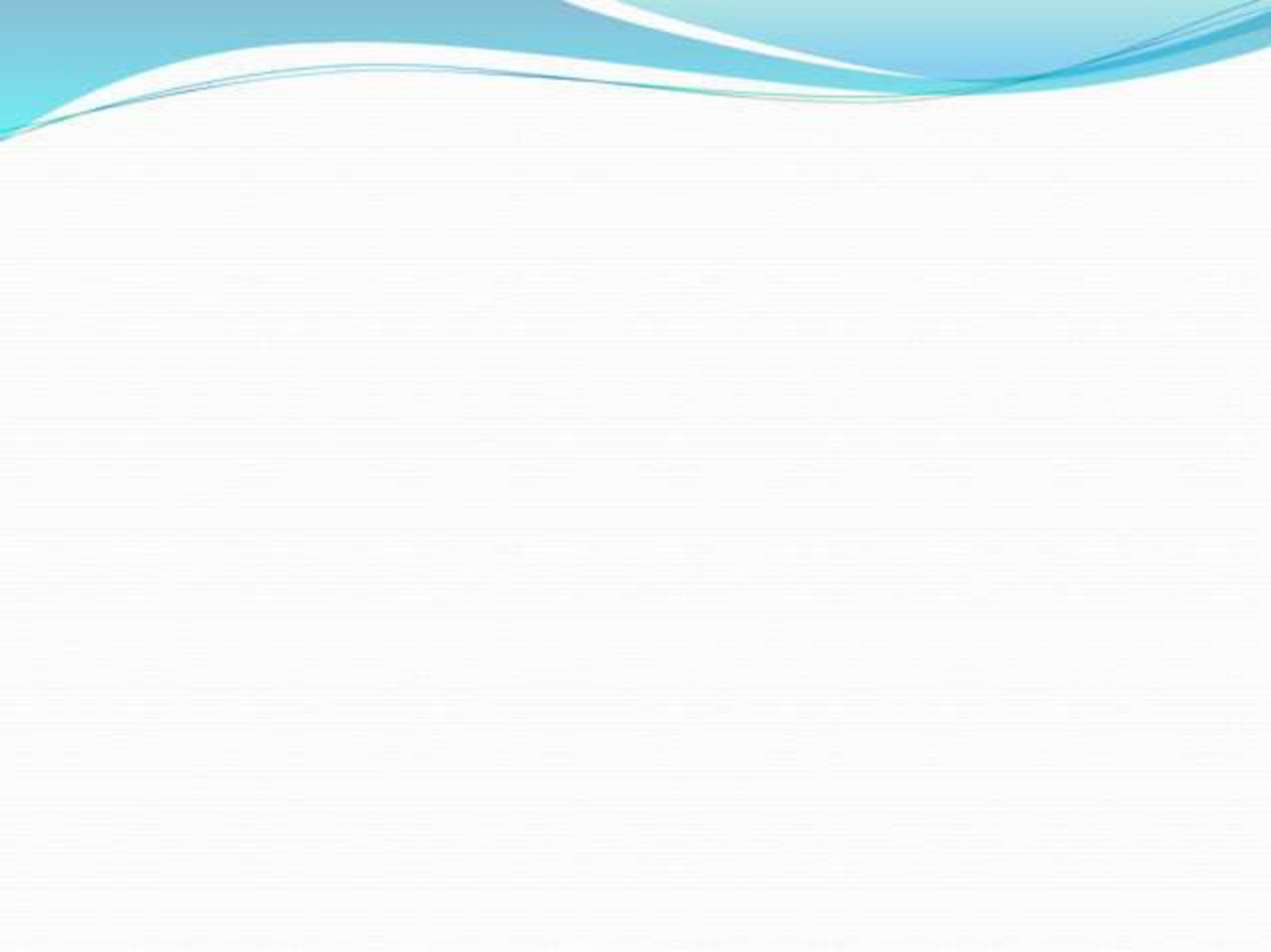
SUMMARY



THANK YOU







NURSING MANAGEMENT

- Monitor vital signs 2-4 hrly (Temperature, Pulse rate, Oxygen saturation, BP, and Respiratory Rate)
- Monitor Input/output☐ Give treatment as prescribed.
- Maintain a clear airway
 - Turn the patient every 2 hours.
 - Do not allow the child to lie in a wet bed
 - Pay attention to pressure points.
- Monitor IV fluids very carefully and examine frequently for signs of fluid overload

Cont...

Contd...

- Nurses should monitor the child's state of consciousness, respiratory rate and pupil size every 3 hours during the first 24 hours (thereafter, every 6 hours)
- On discharge, assess all children for neurological problems, especially hearing loss.
- Measure and record the head circumference of infants
- If there is neurological damage, refer the child for physiotherapy, if possible, and give simple suggestions to the mother for passive exercises