

# Neonatal Infections-1

## Objectives ( 1&2):

Completing this lecture will provide you a better understanding of Neonatal Sepsis:

1. What are the defense mechanisms in the newborn?
2. In which neonate I should suspect infection?
3. How can I diagnose and treat neonatal infections?
4. Why do a baby develop NE?
5. How can I treat conjunctivitis according to the cause?

Mechanisms of resistance to infection in neonates:

### I- Non specific

- A- Surface protection
- B- Phagocytes & PMN

### II- Specific

- A. Cellular immunity
- B. Immunoglobulins

Factors increase the frequency (or severity) of infections:-

- 1- Mother susceptible to certain pathogens
- 2- Vaginal colonization with gp B streptoc.
- 3- Prolonged rupture of memb (>18 hr).
- 4- Maternal UTI.
- 5- Difficult or traumatic delivery.
- 6- Prematurity.
- 7- Resuscitation at birth.
- 8- Diagnostic & therapeutic procedures for infants cared for in neonatal intensive care units.
- 9- Bottle feeding.
- 10- Poor hand washing.

### Infections in the newborn

- 1- Congenital: E.g. CMV, Rubella, *Toxoplasma gondii*, *Treponema pallidum*.
- 2- Acquired:

- a. Perinatal (intrapartum or ascending)
- b. Postnatal (postpartum or nosocomial)

**Clinical manifestations:**

- Respiratory distress.
- Abnormal body temperature.
- GIT symptoms
- Neurological symptoms
- Hematological symptoms
- Metabolic acidosis

**Diagnosis:**

- ➔ Maternal history
- ➔ Recovery of etiologic agent from body fluids or tissues
- ➔ PCR
- ➔ CBC
- ➔ Elevated ESR & CRP
- ➔ Ag. Detection

**Differential Diagnosis:**

- Asphyxia
- Aspiration pneumonia
- Hypoglycaemia
- ICH
- Severe anemia
- CHD, myocarditis

**Treatment:**

- Initial therapy:
  - ✓ Ampicillin (100-200 mg/kg) + Gentamicin (5-7.5 mg/kg)
  - ✓ 3rd generation cephalosporins.
  - ✓ When staph. infection is suspected treatment is initiated with methicillin or cloxacilin + gentamicin.
- Supportive therapy

**Complications of sepsis:**

- Endocarditis.
- Septic emboli.
- Abscess.
- Septic arthritis and osteomyelitis.

**Complications of meningitis:**

**Immediate:**

- Ventriculitis.
- Cerebritis.
- Brain abscess.

**Late:**

- Hearing loss.
- Abnormal behavior.
- Developmental delay.
- Seizure.
- CP.
- Hydrocephalus.