



# RAMA UNIVERSITY

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## **FACULTY OF NURSING**

# NEONATAL SEPSIS/SEPTICEMIA

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# Introduction

- Neonatal Sepsis or sepsis neonatorum occurs when pathogenic bacteria gain access into the blood stream.
- They may cause overwhelming infection or localize into lungs causing pneumonia or into meninges causing meningitis.
- Neonatal Septicemia occurs in infants less than 90 days of age


## Etiology

- A number of different bacteria including E. coli, listeria and certain strains of streptococcus may cause neonatal sepsis.
- Early onset neonatal sepsis most often appears within 24 hours of birth.
- The following increase an infant's risk of early onset sepsis:- – Group B streptococcus infection during pregnancy – Preterm delivery and LBW baby – Infection of placental tissue and amniotic fluid – Multiple pervaginal examination – Maternal fever and infection

- Babies with late neonatal sepsis get infected after delivery by the organism thriving in the external environment of the home or hospital.
- The following increase infant's risk of developing late onset septicemia. – Having an intracath in blood vessel for long time. – Hospital stay for long time. – Lack of aseptic technique following by care givers. – Lack of breast feeding. – LBW – Superficial infection ( pyoderma, umbilical sepsis)

# Classification

- Neonatal sepsis can be classified into two sub-types depending upon time of onset of symptoms



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graph TD; A[Neonatal sepsis can be classified into two sub-types depending upon time of onset of symptoms] --> B[Before 72 hours of life (early onset sepsis)]; A --> C[After 72 hours of life (late onset sepsis)];
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Before 72  
hours of life  
(early onset  
sepsis)

After 72  
hours of life  
(late onset  
sepsis)

## Risk factors

- Generally well-appearing
- Previously healthy – full term (at  $\geq 37$  weeks gestation) – no antibiotics perinatally – no unexplained hyperbilirubinemia that required treatment – no antibiotics since discharge – no hospitalizations – no chronic illness – discharged at the same time or before the mother
- No evidence of skin, soft tissue, bone, joint, or ear infection

## Clinical Feature

- The manifestation of neonatal septicemia are subtle, vague and non-specific.
- The most common complaint concerning infant's progress is "failure to do well" or "not looking right".
- Hypothermia is a common manifestation.

The signs of sepsis are non-specific and include:

- Body temperature changes



- Diarrhea
- Low blood sugar
- Reduced movements
- Reduced sucking
- Breathing problems

# Clinical Feature

## ➤ ***Circulator system***

- Pallor, cyanosis
- Cold, clammy skin
- Hypotension and shock
- Edema
- Bradycardia or tachycardia

## ➤ ***Respiratory system***

- Irregular respiration , apnea,
- Cyanosis
- Grunting
- Dyspnea
- Retraction

## ➤ ***Central Nervous System***

- Reduced activity ( lethargy , coma, poor cry)
- Irritability , tremors
- Full fontanel
- Abnormal eye movement

## ➤ ***GI system***

- Poor feeding
- Vomiting
- Diarrhea or decreased stool pass
- Abdominal distension
- Hepatomegaly

## ➤ ***Hematopoietic system-***

- Jaundice
- Pallor
- Ecchymosis
- Splenomegaly
- Bleeding

## Diagnostic Evaluation

- Blood Culture
- Urine examination
- CSF study
- CBC
- C- reactive protein
- ESR may be elevated ( >15 mm 1st hour)

# Management

- For babies with neonatal sepsis,
  - Supportive care and
  - Antibiotic therapy

## ➤ ***Supportive care***

- Provide warmth
- Start IV line. Infuse normal saline 10ml/kg over 5 to 10 minute.
- Infuse 10%glucose, 2ml/kg stat to manage hypoglycemia.
- Administer injection vitamin K, 1mg IM to prevent bleeding.
- If the baby is cyanosed or grunting provide oxygen via hood or mask.

## ➤ ***Antibiotic therapy***

- Antibiotic therapy should cover common causative bacteria like E.coli, staphylococcus aureus and klebsiella pneumoniae.
- A combination of Ampicillin and Gentamycin is recommended for treatment of sepsis and pneumonia.



# Prognosis

- The prognosis is variable. Severe neurological and respiratory problems may occur in low birth weight babies as a result of early onset sepsis.
- Late onset sepsis and meningitis may result in poor outcomes.

THANK

YOU