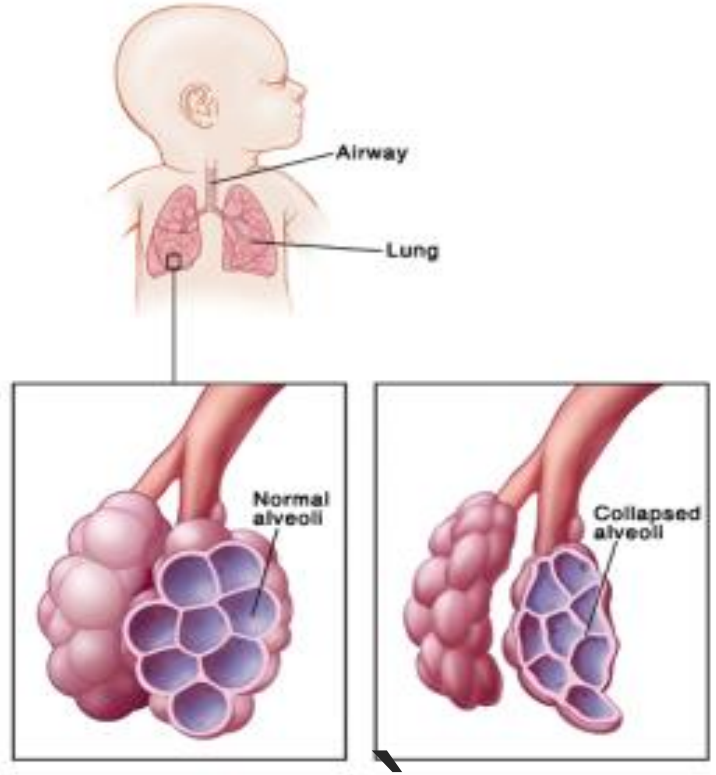

Neonatal Respiratory Distress Syndrome (RDS)

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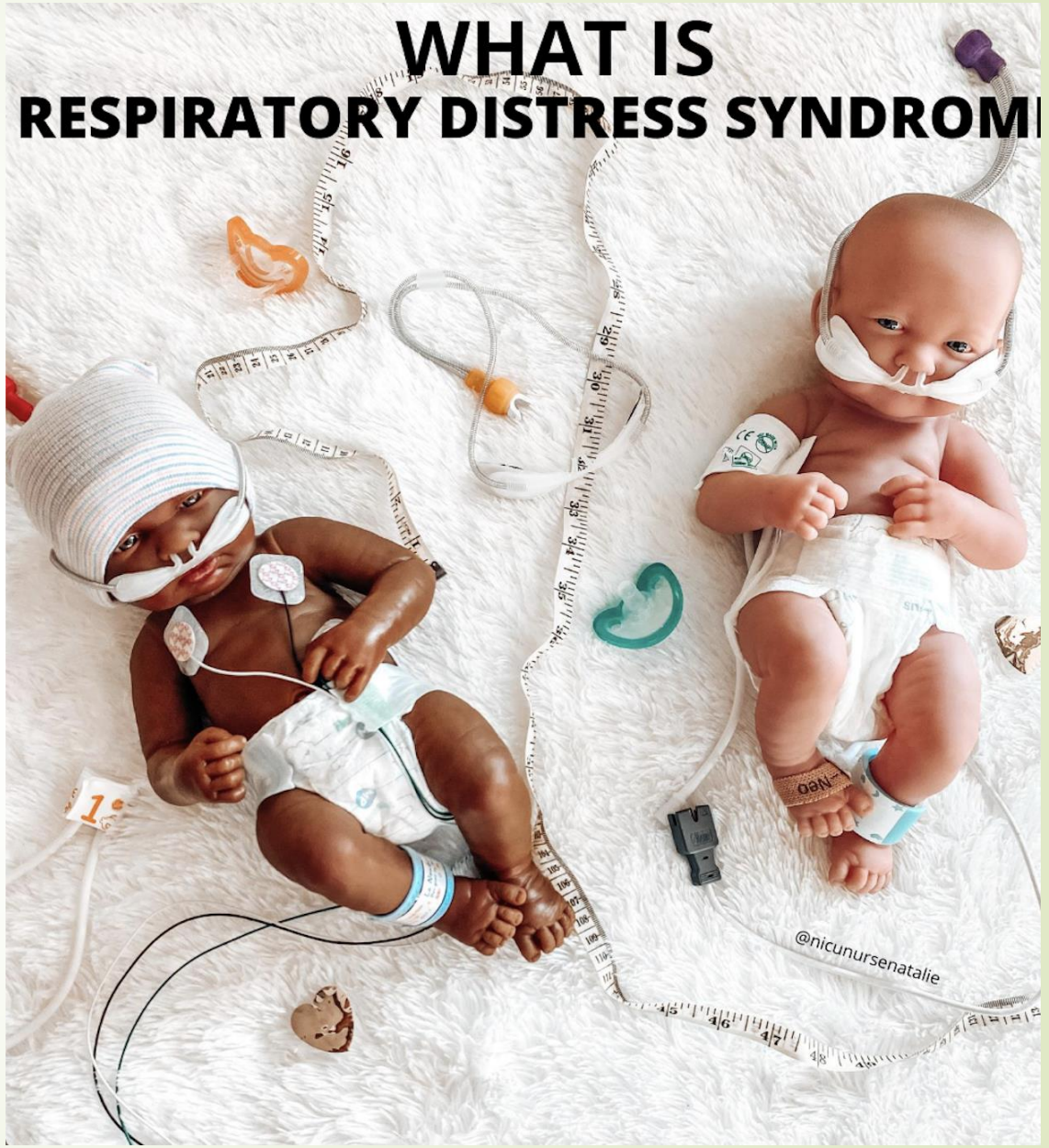
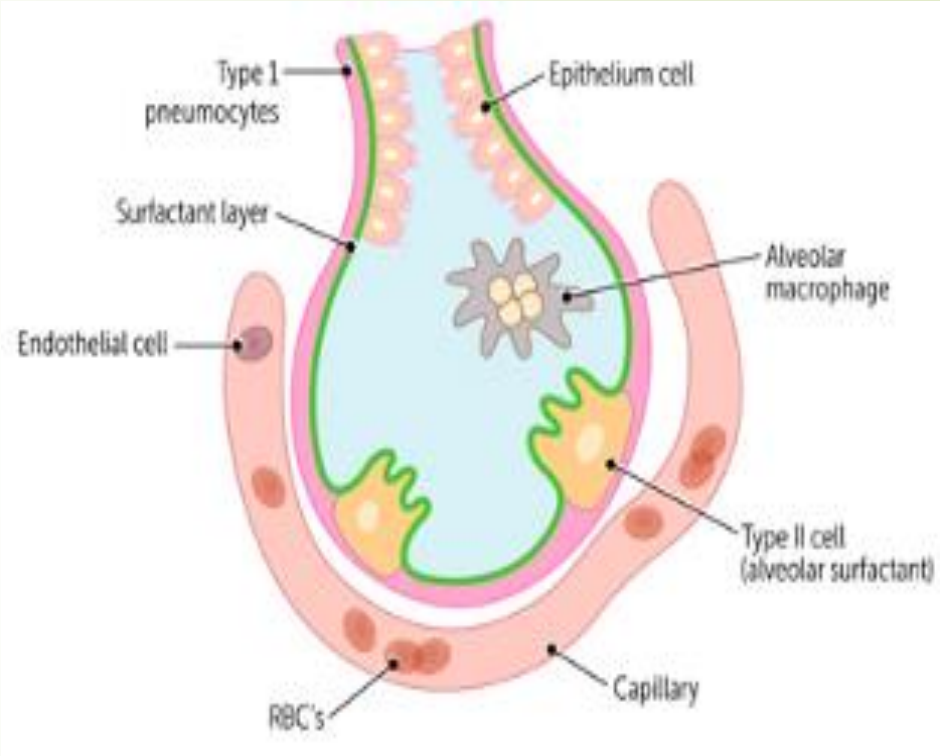
RDS

- Clinical syndrome of neonates commonly premature baby
- Characterized by progressive and usually fatal respiratory failure
- Resulting from atelectasis and immaturity of lungs.



- Surfactant production
- starts around 24-28wks of life
- peaks at 35wks.

- neonates less than 35wks is prone to develop RDS,
- without surfactant infants are unable to keep their lungs inflated.

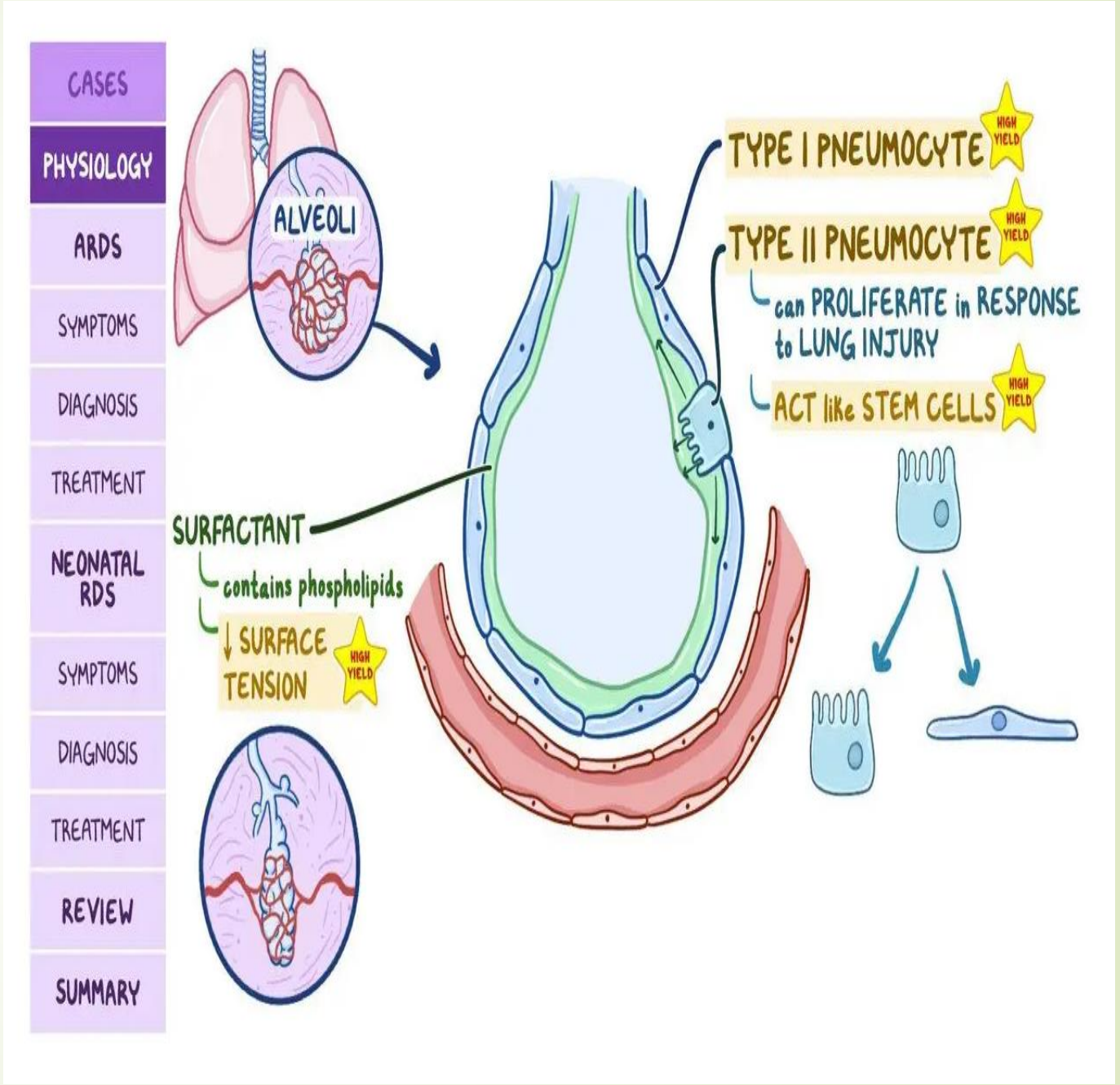


Incidence

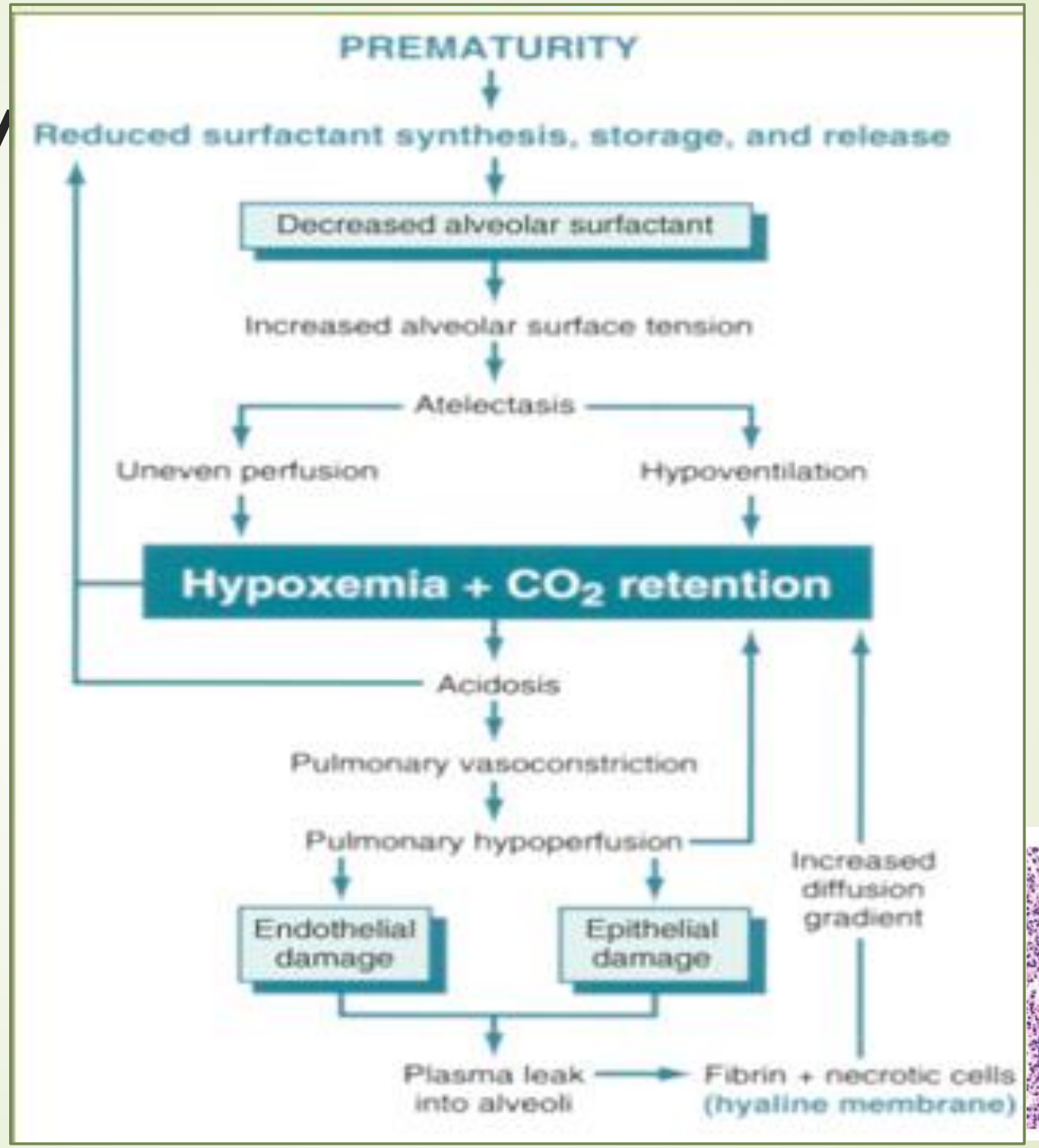
Incidence is inversely related to gestational age

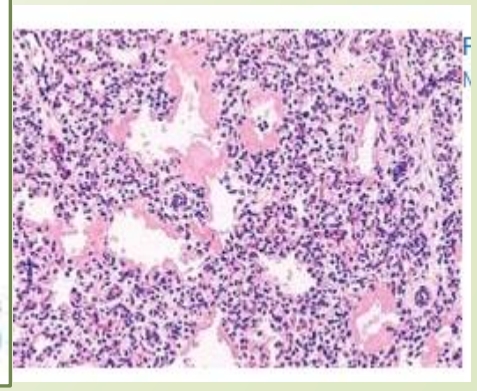
Gestational age	Incidence
<24 weeks	95%
24-28 weeks	60-80%
28-34weeks	15-30%
>34-36 weeks	3-4%
>37	Rare

Pathophysiology



Pathophysiology





Risk Factors

Increased Risk	Decreased Risk
Prematurity	SGA
Male sex	Female sex
Familial predisposition	Corticosteroid
Cesarean delivery without labour	Vaginal Delivery
Perinatal asphyxia	Narcotic /cocaine use
Multiple gestation	Thyroid hormone
Maternal diabetes	Prolonged rupture of membrane

Differential Diagnosis

- Pneumonia
- Transient tachypnoea of newborn
- Meconium aspiration syndrome
- Pneumothorax
- Congenital Malformation

Clinical Features

- Cyanosis or pallor
- Nasal flaring
- Grunting
- Fine inspiratory crackles
- Pronounced intercostals or substernal retractions
- Tachypnea

In progressive state

- Frequent/ persistent Apnea
- Absent spontaneous movement
- Unresponsiveness
- Diminished breath sound
- Mottling
- In severe condition- shock like state

Diagnosis

- Silverman Anderson score
- Pulse oximetry
- Chest x-ray: ground class appearance
- ABG

Silverman Anderson Score

- **Total score:10**
- **No or minimal RD: 0-1**
- **Mild RD: 4-6**
- **Moderate RD: >6(IRF)**
- **Severe RD: 8-10**

Feature	Score 0	Score 1	Score 2
Chest movement	Equal	Respiratory Lag	See saw respiration
Intercostal Retraction	None	Minimal	Marked
Xiphoid Retraction	None	Minimal	Marked
Nasal Flaring	None	Minimal	Marked
Expiratory grunt	None	Audible with stethoscope	Audible

Intervention according to score

2-3:HHFNC

4-6:NIV: NCPAP/NIPPV

7-8: NIPPV+Surfactant

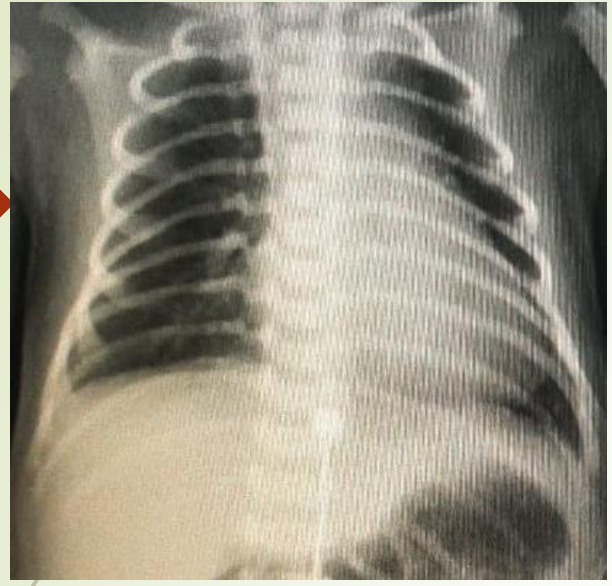
>8-10: Endotracheal intubation + surfactant

Neonates on HHFNC

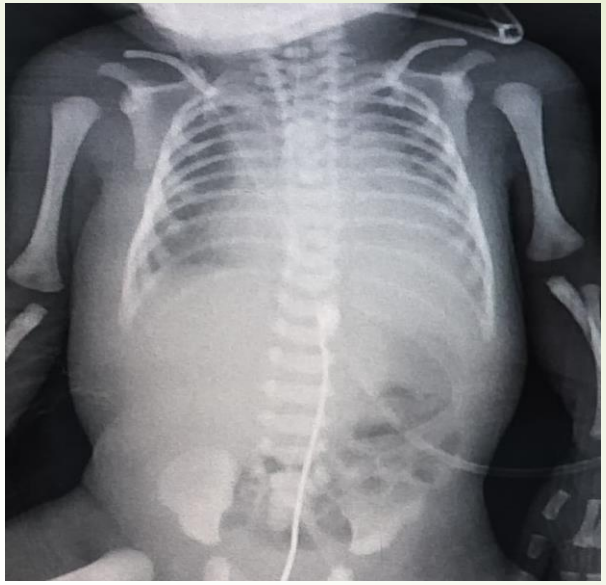
N-CPAP

n-IPPV

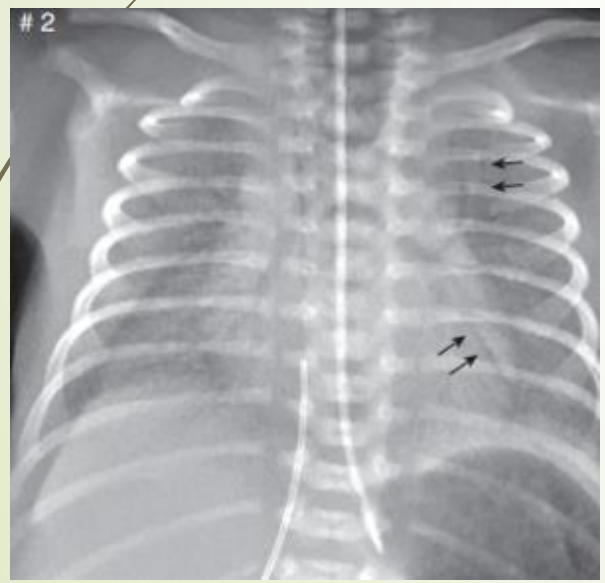
MECHANICAL VENTILATION



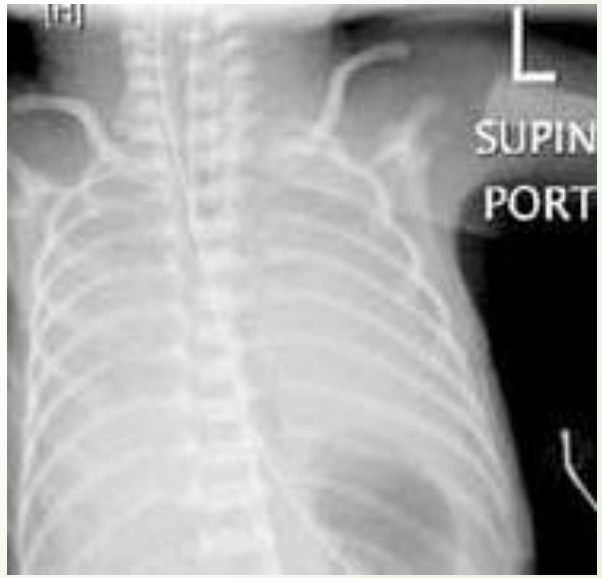
Fine homogenous mottling



Air bronchogram



Confluent alveolar shadowing obscuring cardiac border



Complete white out lung

Management

Supportive management

- Neutral thermal environment
- Maintain Fluid and Electrolyte Balance
- Maintain nutrition by OG tube feeding of EBM
- Antibiotics as per NICU protocol.

Specific Management

- Respiratory support:
- Should be started in LR
- Assisted Ventilation-
- by 2 hrs of age-
- nIPPV/ nCPAP
- Mechanical ventilator
- Surfactant therapy

Surfactant

- **Survanta** 4ml/kg administered through ET tube

- Indications of Surfactant
  - <27 weeks.
  - FiO2 >0.40

Indication of Mechanical Ventilator

- CPAP/NIPPV failure
- Worsening RDS
- Severe respiratory distress with resp. acidosis PaCO2>65mm Hg or rapidly rising PaO2 <50 mm Hg or oxygen saturation <90% with an FiO2 0.6-0.7
- Persistent or Recurrent severe apnea
- Severe chest retraction ,grunting , indrawing and or gasping respiration

Follow up

- Vitals-Respiratory rate
  Heart rate
  BP
  Temperature
  Intake /Output
  Oxygen saturation by Pulse oximetry
- Clinical co ordination- cyanosis, signs of respiratory distress
- Investigations –Electrolytes
  Blood glucose
  Blood gas.
- Radiography- Chest X ray

Complications

- Respiratory failure
- Pulmonary haemorrhage
- Pneumothorax
- Retinopathy of prematurity
- Broncho pulmonary dysplasia

PROGNOSIS

- Excellent
- Guarded when it is complicated with
- Sepsis
- cardiac defect

Prevention

- Avoidance of Pre term delivery
- Antenatal administration of corticosteroid to women before 34 weeks
- Antenatal and intrapartum fetal monitoring
- Avoidance of unnecessary or poorly timed caesarean section

Thank You