Neonatal Respiratory Disorders
An Introduction

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Disorders commonly seen

- HMD - Hyaline membrane disease
- BPD - Bronchopulmonary dysplasia
- CLD - Chronic lung disease
- PIE - Pulmonary Interstitial Emphysema
- Pneumonia
- Air leak syndromes
- TTN - transient tachypnea of Newborn
- PPHN - Persistent Pulmonary Hypertension of Newborn
- MAS - Meconium aspiration syndrome
HMD

- Mainly in preterm less than 34 weeks EGA
- State of surfactant deficiency
- Progressive respiratory failure and hypoxia
- Clinical signs – retractions and grunting
- Surfactant replacement therapy – as early as possible
- Mechanical ventilation and CPAP
HMD characterized by --
Ground glass appearance
Low lung volumes
Air bronchograms
Lateral view-
See the low lung volumes
HMD

Improvement in HMD after giving surfactant
HMD

Microscopic exam of lungs with HMD, notice the collapsed alveoli and collagen membrane.
Bronchopulmonary dysplasia

- Mainly in preterm infants
- Oxygen requirement for >28 days after birth with changes on chest x-ray
- Prematurity, mechanical ventilation, oxygen toxicity, infection and poor growth
- Adequate nutrition, minimize mech. Ventilation and oxytrauma, diuretics, bronchodilators
Pulmonary interstitial emphysema

- Acute lung injury
- Mainly related to mechanical ventilation
- Minimize barotrauma
- Supportive care
Meconium Aspiration Syndrome

• Mainly in term or post-term infants
• Meconium-stained liquor at delivery
• Primary or secondary asphyxixia
• Pulmonary hypertension
• Adequate oxygenation
• Antibiotics and supportive care
Meconium aspiration
Meconium aspiration
Pulmonary Hypertension

- Primary or Secondary
- Secondary because of meconium aspiration, infection, asphyxia
- Supportive care – maintain normoxia PaO2 about 50-80
- Alkalosis (?), maintain cardiac output, vasodilators, Tolazoline (?) and Inhaled Nitric Oxide
- ECMO
Transient Tachypnea of Newborn

• Also known as RDS –II
• Mainly in term infants
• Retained fluid in the lungs
• Rarely needs mechanical ventilation
• Resolves in 48-72 hours
• X-ray show hyper expanded lungs with streaks of retained fluid and fluid in interlobar fissures
Pneumonia

- Can occur in term or preterm infants
- GBS is the most common organism at birth
- Usually diffuse infiltrate
- Respiratory support
- Prevent pulmonary hypertension
- Antibiotics
Pneumonia
Apnea

• Apnea of prematurity or a symptom of another problem

• Treatment include, theophylline, CPAP, caffeine
Air leak syndromes

• Pneumothorax
• Pnemomediastinum
• Pulmonary Interstitial emphysema (PIE)
• Pneumopericardium