



RAMA
UNIVERSITY

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FACULTY OF NURSING

MECONIUM ASPIRATION SYNDROME

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DEFINITION-

Neonates born to mothers with thick or thin meconium stained liquor can aspirate meconium into lungs and develop Respiratory distress, this is known as MAS.

RISK FACTORS

- Maternal HT
- Maternal DM
- Maternal heavy cigarette
- Maternal chronic respiratory or Cardio vascular disease
- Post term pregnancy
- Pre-eclampsia/ eclampsia
- Oligohydramnios
- IUGR
- Abnormal fetal HR pattern

CAUSES-

- Hypoxia in distressed baby
- Meconium stained liquor
- Uterine infections
- Difficulty during labour process

PATHOPHYSIOLOGY

Mechanical obstruction of airways

- Thick and viscous meconium lead to Complete or partial airway obstruction.
- With onset of respiration – meconium migrates from central to peripheral airways.
- Complete obstruction – atelectasis
- Partial obstruction – Ball-valve – air trapping.- Risk of pneumothorax - 15 – 33%

PATHOPHYSIOLOGY

- Chemical pneumonitis: with distal progressing of meconium chemical pneumonitis develop resulting bronchiolar edema and narrowing of the small airway.
- Surfactant inactivation: Bilirubin, fatty acid, triglycerides, cholesterol content of meconium inhibit surfactant function and inactivation.

PATHOPHYSIOLOGY

- Pulmonary hypertension: meconium in lungs stimulate release of proinflammatory cytokines and vaso active substance which cause pulmonary vasoconstriction. Also hypoxia, acidosis, and hyperinflation contribute to pulmonary hypertension

CLINICAL FEATURES-

1. Meconium stained skin, nails and umbilical cord
2. Signs of respiratory distress develop usually within 1st hour of birth-
 - Tachypnoea
 - Intercostal retractions
 - Expiratory grunting
 - Cyanosis
3. Chest may be overinflated/barrel shaped, with a protruding sternum(due to obstructive emphysema)

DIAGNOSTIC EVALUATION

- Before birth the fetal monitor may show Bradycardia
- During delivery or at birth, meconium can be seen in the amniotic fluid and on the infant
- Low APGAR score after birth
- Physical examination: lungs sound (coarse, crackly sound)
- Blood gas analysis: low blood acidity, decreased oxygen and increased carbon dioxide
- Chest x-ray may show patchy or streaky areas in lungs
- Urine colour may appear dark brown

TREATMENT

- Antibiotics:- Ampicillin, Gentamicin
- Warmth care by
 - Mother
 - Radiant warmer
 - Ventilator
- Oxygen therapy by
 - Mask
 - Hoods
- Amniotic infusion
- Extra corporeal membrane

THANK

YOU