Preterm Labor and Premature Rupture of Membranes

EMC 420: Maternal & Child Emergency Care

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Objectives

Upon completion of this lecture you will be able to:

- Define PTL (pre-term labor) and prolonged rupture of membranes (PROM) and describe their significance.
- List risk factors associated with PTL and PROM
- Outline initial evaluation of PTL and PROM
- Describe management of PTL and PROM
- Briefly note the prevention strategies for neonatal infection (with organisms such as Group B Strep [GBS])

Preterm Labor

- Incidence
  - 11.6% of all deliveries
  - Rate increasing since 1980
- Definition
  - Uterine contractions (>***3*** in ***3***0min)
  - Presence of cervical changes [dilitation]
  - Before ***37*** weeks gestation

Risk Factors for Preterm Labor

Historical	**Current Pregnancy**
Low SES	Maternal infections
Race	bacteriuria

ROM

- If rupture of membranes at least one hour before onset of labor: PROM (Prolonged ROM)
- Precise etiology uncertain
  - Multiple risk factors, similar to preterm labor
  - Infection often a factor

Evaluation of PTL / PROM

Four questions

- Is the patient in labor?
- Are the membranes ruptured?
- Is the fetus preterm?
- What risk factors are present?

Patient History

- Detailed history of "labor"
- History of fluid leakage
- Dating of pregnancy / ? due date
- History of risk factors
- Other medical problems
- Social history and home situation

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Physical Exam

- Vitals: signs of infection?
- Fetal heart rate pattern
- Contraction pattern
- Fetal size and presentation
- ***NO*** digital cervical exam if membrane rupture suspected

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Initial Treatment of Preterm Labor

- Is delivery immanent
- Transfer to NICU referral center
  - Transfer of women who are < 33 week gest age
    - Improves mortality by 60%
- Does bed rest help ?
  - No evidence that traditional home-treatments work

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Further Treatment of Preterm Labor

- Steroids
- Tocolytics
- Antibiotics

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Steroids in the Treatment of Preterm Labor

- Dexamethasone 6 mg IM (or IV)
- Reduces (at least for ages: 24-34 wks):
  - RDS (respiratory distress syndrome)
  - IVH (intraventricular hemorrhage)
- Criteria
  - No contraindications to waiting 24-48 hr for delivery
  - No medical contraindications to steroids

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Tocolytics in Preterm Labor

- Tocolytics
  - No evidence that using > 24-48 hr will suppress labor or benefit fetus
  - Allows time to transfer and for steroids to work
- Agents
  - Terbutaline
  - Ritodrine
  - Magnesium

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Tocolytics

- Terbutaline
  - Dose:
    - 0.25 mg SQ , single dose
    - 0.01mg/min
  - Side effects
    - Anxiety
    - Tremor
    - N,V
    - Pulmonary edema

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Magnesium Sulfate

- IV bolus of 4-6 grams
  - followed by 1-4 gram per hour infusion
- Oral forms ***not*** effective
- Therapeutic level = 5.5-7.5 mg/dl (***5-8***)
- Duration of therapy guided by response
  - Toxicity rare
  - Unnecessary to wean

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Magnesium Side Effects

- Maternal
  - Flushing, warmth, sweating, headache, nausea, palpitations
- Respiratory arrest with toxic levels (>15 mg/dl)
  - Loss of patellar ***reflexes*** is early sign (>***8*** mg/dl)
- Antidote = Calcium gluconate
  - One gram [10 mL of a 10% solu.] IV over 3 minutes
- ***No*** significant intrauterine fetal effects

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Management Based GBS on Risk Factors *[FYI]*

- Intrapartum antibiotics for ***all*** women with risk factors during labor
  - Previous GBS infected infant
  - GBS bacteriuria during this pregnancy
- Cultures before antibiotics ***NOT*** necessary

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Summary

- Preterm delivery rates are increasing
- Risk factors predict less than 50% of cases
- Tocolytics can prolong pregnancy for short time, allowing time for transfer or steroids
- Management of PTL or PROM factors
  - Gestational age
  - Availability of tertiary care
  - Antibiotics

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