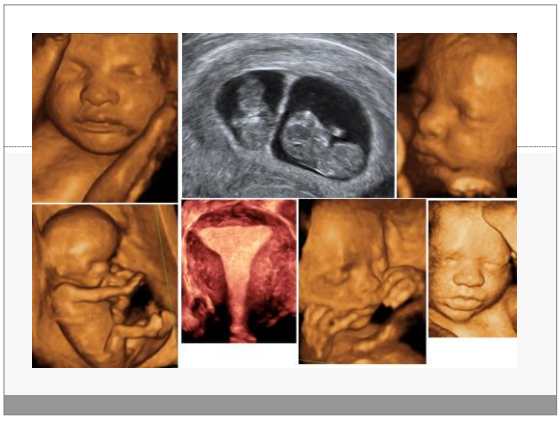
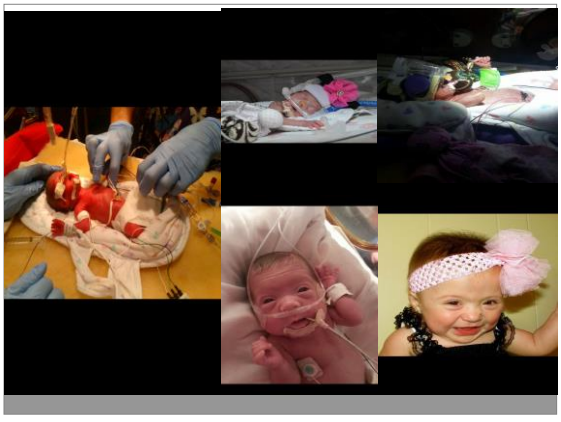

Preterm Birth
DENESE KNORI, RN BSN





March of Dimes

- Saving Babies: In Our Hands - YouTube

Incidence

- Preterm birth is the leading cause of neonatal mortality and the most common reason for antenatal hospitalizations.
- In the United States 9.6% of all births occur before term
- Preterm birth accounts for
  - 70% of neonatal deaths (birth to 1 month)
  - 36 % of infant deaths (1 month – 1 year)
  - 25-50% of long-term neurological impairment in children.

15 million infants are born premature worldwide

- 1 million infants die each year from PTB worldwide

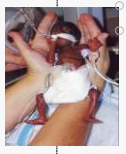
Incidence

- 1.9% of preterm births in the U.S. are less than 32 weeks gestation
- 71% of PTB occur between the gestations of 34-36 weeks
- Preterm births account for 85% of all perinatal morbidity and mortality
- The estimated annual cost of preterm birth in the US is approximately 26.2 billion

Health Problems associated with PTB

Short term problems:

- Respiratory distress syndrome
- Intraventricular hemorrhage
- Necrotizing eneterocolitis
- Bronchopulmonary dysplasia
- Sepsis
- Patent ductus arteriosus



Long term problems:

- Cerebral palsy
- Retinopathy of prematurity
- Autism
- Hearing loss
- Neurological impairment
- Chronic lung problems

Are preterm contractions different than preterm labor?

PRETERM LABOR

VS.

PRETERM CONTRACTIONS

What are the signs and symptoms of PTL?

Four Main Causes

- Infections/inflammation
- Maternal or fetal stress
- Bleeding
- Uterine stretching

Greatest Risk Factors

- History of a preterm
- Current multifetal pregnancy
- Uterine/cervical abnormalities

Lifestyle and Medical Risk Factors

- Late or no prenatal care
- Smoking
- Drinking alcohol
- Using illegal drugs
- Lack of social support
- Extremely high levels of stress
- < 17 or > 35 years of age
- Low social economical status

- Diabetes
- Infections
- Hypertension
- Clotting disorders
- Vaginal bleeding
- IVF
- Underweight or obesity
- Birth defects
- Short intervals between pregnancy (<18 months)

NOW WHAT????

What is your role in the prevention and management of PTL?

Nursing Assessment of the PT Patient

- Assess medical hx, prenatal hx, & review PNR for pregnancy course and labs
- Perform a physical exam focusing on symptoms and complaints
- Identify Gestational age
- Obtain objective data
  - Monitor FHT's and UC's
  - Obtain routine labs: CBC and UA
  - Obtain VS
  - Obtain fFN
  - Assess for ROM
  - Assess Cervical status
  - Order TVU if allowed

- **Identify preterm labor as quickly as possible and notify the physician**

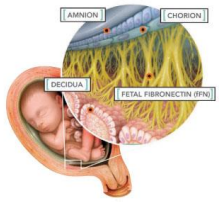
Recognition

Medical Diagnostic Exams

- Biochemical Markers- Fetal Fibronectin (fFN)
- Transvaginal Ultrasound

Fetal Fibrinectin Test

- Swab is collected from the external cervical os via a speculum exam

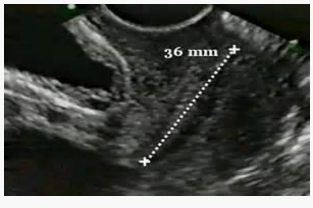


Contraindications for fFN

- Vaginal examination within the past 24 hours
- Cervical dilation greater than 3 cm
- BBOW or Ruptured membranes
- Sexual intercourse within the past 24 hours
- Moderate to gross vaginal bleeding
- Suspected or known placenta abruption or previa
- Gestations less than 22 weeks or greater than 35 weeks

Transvaginal Ultrasound

- Cervical length is obtained by TVU



Contraindications for TVU

- Prior to 15 weeks gestation
- After 28 weeks gestation
- Presence of vaginal bleeding
- Full Bladder

WHAT ARE THE IMPLICATIONS OF NEGATIVE FETAL FIBRONECTIN AND TRANSVAGINAL ULTRASOUND?

WHAT ARE THE IMPLICATIONS OF POSITIVE FETAL FIBRONECTIN AND TRANSVAGINAL ULTRASOUND?

Moderate Risk of PTB

- Disposition: Home
- Nursing Interventions
  - Teach home care instructions
  - Educate patient on signs and symptoms of PTL
  - Discuss risk factors and provide education
  - Stress importance of follow-up care in 1 week
  - Possible administration of antenatal cortiosteriods

Education is KEY!!!!

High Risk/ PTL Identified

- Disposition: Admit/ transfer
- Nursing Interventions
  - Continued evaluation and surveillance
  - Administer antenatal corticosteroids
  - Initiate and manage tocolytic therapy
  - Educate patient and family about what to expect

WHAT ARE THE GOALS OF PTL MANAGEMENT?

Admit/ Transfer or Discharge

G3P2 AT 30 WEEKS GESTATION WITH C/O CRAMPING AND INCREASED DISCHARGE. PT HAS A HISTORY OF 1 PREVIOUS PRETERM BIRTH. SVE 1/50/-2 (NO CHANGE IN 4 HOURS) WITH A NEGATIVE FFN

Admit/ Transfer or Discharge

G2P1 AT 28 WEEKS GESTATION C/O BACK ACHE AND PELVIC PRESSURE. PT HAS AN UNREMARKABLE HEALTH HISTORY. PT'S CERVIX HAS CHANGED FROM FINGER TIP TO 2/70/-2 IN 3 HOURS. CERVICAL LENGTH IS MEASURED AT 20 MM

Admit/ Transfer or Discharge

G2P1 AT 33 WEEKS GESTATION PRESENTS FOR SCHEDULED NST FOR HISTORY OF GESTATION HYPERTENSION. PT DENIES C/O. TOCO REVEALS THE PATIENT IS HAVING REGULAR UC'S AND SVE IS 3/80/-1. NO OTHER TESTING AVAILABLE.

Admit/ Transfer or Discharge

G2P1 AT 27 WEEKS GESTATION WITH C/O LOW DULL BACK ACHE, PELVIC PRESSURE, AND VB. PT CONCEIVED BY IVF. PT IS HAVING CONTRACTIONS Q 15-20 MINUTES. SVE IS 1+/70/-3 WITH NO CHANGE IN 2 HOURS. FFN IS NEGATIVE AND TVU IS 25

TOCOLYTIC MEDICATION MANAGEMENT

Indications for Tocolytic Therapy

- Diagnosis of Preterm Labor
- Gestation is beyond 22 weeks but less than 34 weeks
- Live fetus without signs of severe distress, congenital anomalies incompatible with life, or maternal contraindications

Contraindications for Tocolytic Therapy

- *Preeclampsia or eclampsia*
- *Placental abruption or acute hemorrhage*
- *Intrauterine infection*
- *Acute fetal distress (except intrauterine resuscitation)*
- *Maternal hemodynamic instability or complications*
- *Fetal demise (singleton)*
- *Advanced cervical dilatation*

Medications for Management of PTL

- Calcium Channel blocker
  - Nifedipine/ Procardia
- NSAIDS
  - Indomethacin
- CNS Depressant
  - Magnesium Sulfate
- Beta-Adrenergic Receptor Agonist
  - Terbutaline sulfate/ Brethine

Calcium Channel-Blockers

- Nifedipine/ Procardia

  Smooth muscle relaxant

  - **USE CAUTIOUSLY WHEN ADMINISTERD CONCURRENTLY WITH MAGNESIUM**
    - **May cause severe hypotension and neuromuscular blockade**

NSAIDS

- Indomethacin
  - Use cautiously in patients with infections due to its anti-inflammatory properties.

Beta-adrenergic receptor agonist

- Terbutaline
  Smooth muscle relaxant

Do not administer if maternal HR is > 120

CNS Depressant

- Magnesium
  Smooth muscle relaxant

Use cautiously with concurrent administration with calcium channel blockers

Magnesium Sulfate Alert

- Magnesium Sulfate is an ISMP high alert medication because of the potential for toxicity that could result in causing significant harm to the patient.

Magnesium Toxicity Antidote

- Calcium Gluconate is the antidote for magnesium toxicity and should be readily available whenever magnesium sulfate is being administered. One gram of calcium gluconate (10ml of 10% solution) may be administered intravenously over 3 minutes

Other medications for PTL Management

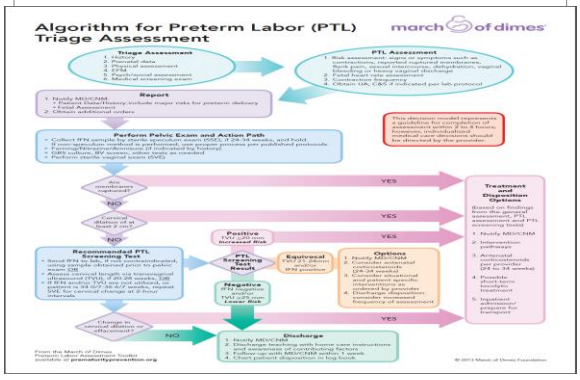
- Antibiotics
  - Contraindicated for intrauterine infections
- Progesterone
  - Limited research related to long term safety

Single most effective intervention to improve fetal well being

- Antenatal Cortocosteroids
  - Betamethason or Dexamethasone

Antenatal Cortiocosteroids do not prevent PTB but do prevent major complications in the neonate.

Conclusion



https://www.prematurityprevention.org/Sign-In?ReturnUrl=%2fToolkits-Reports%2fPreterm-Labor-Assessment-Toolkit-(PLAT)

References

Center for Disease Control and Prevention. (2013, February 11). National Prematurity Awareness Month. *Centers for Disease Control and Prevention*. Retrieved from http://www.cdc.gov/features/prematurebirth/

March of Dimes. (2013) Preterm labor assessment toolkit retrieved from https://www.prematurityprevention.org/Toolkits-Reports/Preterm-Labor-Assessment-Toolkit-(PLAT)

March of Dimes. (2012, October). Preterm labor. *Medicines for Preterm Labor | Pregnancy | | March of Dimes*. Retrieved from http://www.marchofdimes.com/pregnancy/pretermlabor_drugs.html

March of Dimes. (2015). What we know about prematurity. *What We Know about Prematurity | Mission | | March of Dimes*. Retrieved from http://www.marchofdimes.com/mission/prematurity_indepth.html

References

March of Dimes. (2013, October). Premature Babies | *March of Dimes*. Retrieved from http://www.marchofdimes.org/complications/premature-babies.aspx

The American College of Obstetricians and Gynecologists. (2012, June). Management of preterm labor. *ACOG.org*. Retrieved from http://www.acog.org/Resources_And_Publications/Practice_Bulletins/Committee_on_Practice_Bulletins_--_Obstetrics/Management_of_Preterm_Labor

The American College of Obstetricians and Gynecologists. (2012, October). *Prediction and prevention of preterm birth*. Retrieved from http://www.acog.org/Resources_And_Publications/Practice_Bulletins/Committee_on_Practice_Bulletins_--_Obstetrics/Prediction_and_Prevention_of_Preterm_Birth