PRETERM LABOR

DEFINITION: Regular uterine contractions and cervical change (such as dilation or effacement) occurring between 20 and 37 weeks gestation.

RISK FACTORS: (even with risk assessment, can only predict 50% of PTL cases)
US preterm delivery rate is 11%.

Previous preterm labor (increases risk 2.5x)
Socioeconomic Factors
- Poverty/less education
- Emotional or occupational stress
- Domestic abuse

Uterine structural defects
- Bicornuate uterus
- In utero DES exposure
- Therapeutic abortions (>than 3)
- Incompetent cervix

Overdistension of uterus
- Macrosomia
- Polyhydramnios
- Multiple gestation

Premature rupture of membranes
Race – African American
Malposition
Infections
- Vaginal and cervical
- Chorioamnionitis, STD's
- Pyelonephritis, cystitis
- Other maternal febrile states
- Intrauterine devices

Other maternal conditions
- Peritonitis, pancreatitis, cholecystitis,
- Abdominal surgery
- Poor/excessive weight gain
- Diabetes,
- Hypertension
- Smoking
- Placental abruption
- Trauma

Substance abuse
Age <17 or >35

If it's the second trimester, painless bleeding, think cervical incompetence and think about cerclage if membranes intact and no signs of chorioamnionitis. Involve OB early.

MANAGEMENT: (goal is to prevent neonatal disease)
- HCMC OB/GYN consult/ NICU present at delivery
- Hydration: 500 cc LR over one hour, then continue IV very carefully. Many of the tocolytics may cause flash pulmonary edema in conjunction with over hydration.
- Labs: CBC with diff, cath UA/UC, UTOX, type & screen, wet prep, cultures (GC/chlamydia, GBS)
- Treat underlying condition: UTI, vaginosis, etc.
- Consider prophylaxis for group B strep in patients with imminent vaginal delivery. Unless recent negative GBS culture. [See Group B Strep]
- If 24-34 weeks EGA, give Betamethasone 12 mg IM, 2 doses, 24 hours apart or Dexamethasone 6 mg IM 2 doses 12 hours apart to help with lung maturity

- Tocolysis (to prolong pregnancy for 2-7 days and allow administration of steroids) in patients meeting these criteria:
    - No contraindications to individual drug chosen
    - No contraindications to prolongation of pregnancy
    - Fetus healthy and able to withstand further gestation (24-34 weeks GA)
    - Clear diagnosis of preterm labor
    - Cervix dilatation not advanced (use clinical judgment, poor prognosis if dilate > 4 cm)
    - Vaginal bleeding not significant or life threatening (mild bleeding may be from cervical dilatation, small abruption)
    - Beyond 32 weeks with determined lung maturity will achieve better outcomes with delivery rather than expectant management

    - **Contraindications** to tocolysis – IUFD, lethal fetal anomaly, non-reassuring fetal assessment, IUGR (severe), intrauterine infection or chorioamnionitis, Severe preeclampsia, placental abruption.

TOCOLYTIC MEDICATIONS: (consult OB to determine appropriate medication)

Terbutaline: Don't use if maternal cardiac disease, poorly controlled diabetes, thyrotoxicosis or hypertension

Magnesium Sulfate: Don't use if patient has hypocalcemia, myasthenia gravis, or renal failure

Indomethacin: Don't use if patient has asthma, GI bleed, oligohyramnios, renal failure, hepatic impairment or if > 34 wks gestation

Nifedipine: Don't use in maternal liver disease

Cervical ultrasound and or fetal fibronectin testing have good negative predictive value. Fibronectin is normally absent in cervicovaginal secretions between 22 to 37 weeks of pregnancy. Normal cervical length measured between 18 to 28 weeks should be greater than 2.5 cm. No need for tocolytics if normal. Evidence does not support home bed rest or home tocolytics.

Agent	Dose	Maternal Side effects	Caution
Terbutaline (Used infrequently)	IV 0.01 to 0.025 g/min SQ 0.25 q 1 to 4 hr PO 2.5 to 5.0 mg q 3 to 4 hr	Tremor, Headache, Nausea, Tachycardia, Hypotension, Hypoglycemia	Fluid overload, Pulmonary edema
Magnesium Sulfate (Standard of care at HCMC)	Initial 4 gm IV, then 1 to 4 gm/hr (Follow HCMC protocol)	Sweating, Nausea, Muscle weakness, Headache diplopia, Dry mouth Pulmonary edema, Cardiac arrest	Check magnesium level 1 hr after loading dose. then q 6 hr flu level of 4-8 mg/dl Respiratory arrest, Don't use with Ca channel blockers, Myasthenia Gravis, renal failure
Indomethacin (Used by perinatologist)	Initial 50 mg/po or 100 mg rectal suppository Then 25 mg q 4 hr	Nausea, Heartburn	GI bleed, Don't use after 34 weeks
Nifedipine (Used by perinatologist)	Initial 20 to 30 mg po Then 10 to 20 mg po q 4-6 hr	Headache, Flushing Peripheral edema, Constipation, Nausea transient hypotension	Renal, cardiac disease or hypotension Don't use with magnesium sulfate

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