Acute Preterm Labor Evaluation

Symptoms of preterm labor (23.0 – 33.9 weeks of gestation) may be variable, but typically include one or more of the following:
- Persistent contractions with pelvic pressure/backache
- Regular uterine contractions on external tocometry
- Increased vaginal discharge
- Leakage of fluid
- Vaginal spotting/bleeding

Initial evaluation upon presentation to labor and delivery (or to clinic) should include the following, generally in this order.

1. Evaluation of fetal well-being:
   - Continuous external fetal monitoring and tocometry (if available, and if ≥23 weeks of gestation)
   - Perform basic ultrasound for fetal size, presentation, maximum vertical pocket for amniotic fluid assessment, placental location

2. Assess for evidence of pertinent co-existing conditions as appropriate
   - Chorioamnionitis:
     - Abdominal exam/fundal assessment
     - Consider complete blood count with differential
     - Consider amniocentesis if exam findings are equivocal
   - Abruption:
     - Abdominal exam/fundal assessment
     - Complete blood count (if not already ordered)
     - Coagulation panel
   - Urinary tract infection:
     - Urinalysis
     - Urine culture

3. Vaginal Examination
   - Sterile speculum exam:
     - Fetal fibronectin: Consider obtaining a fetal fibronectin swab prior to digital cervical examination. The fetal fibronectin swab should be obtained during speculum exam by rotating the sterile applicator tip across the posterior fornix of the vagina for 10 seconds to absorb cervicovaginal secretions
- Causes of false positive fetal fibronectin:
  - Cervical manipulation within the past 24 hours – for example, by digital cervical examination, or during intercourse
  - Gross vaginal bleeding
  - A negative fetal fibronectin in the setting of recent cervical manipulation is a valid result.
- Group B strep culture
- Consider (not mandatory) wet prep evaluation for yeast, bacterial vaginosis, trichomonas
- Consider (not mandatory) gonorrhea and chlamydia swabs
- Evaluate for rupture of membranes (nitrazine, pool, fern, or placental alpha microglobulin-1 protein) as appropriate
- Check digital sterile vaginal exam if no evidence of PPROM and no placenta previa

**Confirmed PPROM**
- Women found to have PPROM should be admitted, and the PPROM protocol initiated

**Confirmed/Suspected Preterm Labor**
Women with initial cervical dilation of 3 cm or greater and/or those with 80% cervical effacement in the setting of symptoms of acute preterm labor are at risk for spontaneous preterm birth. Therefore, the following should be initiated:

1. **Admit patient:** Initiate transfer to facility with higher-level NICU care if applicable
2. **Corticosteroids for fetal maturity:**
   - Betamethasone 12mg IM q24 hours x 2 doses OR
   - Dexamethasone 6mg IM q12 hours x 4 doses
   - Refer to Antenatal Corticosteroids protocol for additional information
3. **Antibiotics for GBS prophylaxis**
4. **Consider Tocolysis for 48 hours maximum**
   - Tocolysis should be considered provided there are no contraindications.
   - Contraindications to tocolysis include intrauterine fetal demise, lethal fetal anomaly, non-reassuring fetal status, severe pre-eclampsia, maternal bleeding with hemodynamic instability, and chorioamnionitis
   - May provide short-term prolongation of pregnancy, enabling the administration of antenatal corticosteroids and magnesium sulfate for fetal neuroprotection, as well as transport (if indicated) to a tertiary facility
   - There is no evidence that tocolytic therapy (or the brief prolongation of pregnancy that results from tocolysis) has any direct favorable effect on neonatal outcomes.
   - First line: calcium channel blockers, NSAIDs (if <32 weeks of gestation)
   - Refer to Tocolysis protocol for additional information
5. **Magnesium sulfate for neuroprotection**
   - If <32 weeks of gestation; 4-6g IV bolus, then 1-2g IV per hour
   - Refer to Magnesium sulfate neuroprotection protocol for additional information
6. **NICU consult**
   - review anticipated outcomes, short term and long term
(7) Treat urinary tract infection, gonorrhea, chlamydia, trichomonas if applicable when results available

**Initial Equivocal Evaluation**
Women with an initial cervical dilation of less than 3cm dilated and less than 80% effaced should undergo further evaluation to confirm or rule out preterm labor. The additional evaluation can include transvaginal ultrasound assessment, fetal fibronectin, or repeat clinical examination, or a combination of these. The workup that is obtained depends on clinical resources available and local practice patterns. Available resources may vary based on time of day, day of the week, and/or provider availability.

- **Transvaginal ultrasound cervical length** assessment is the preferred ‘next step’ for evaluation, provided it is available and is performed by trained/credentialed sonographers or physicians and interpreted by trained/credentialed physicians. In the US, credentialing is available through the CLEAR program of the Perinatal Quality Foundation.
  - Women who have a short cervical length (<20mm) are at high risk for preterm delivery. They should be considered to have ‘confirmed preterm labor’ and should be treated as per above.
  - Women who have an equivocal cervical length (20-29mm) in the setting of this cervical examination may benefit from further risk stratification by fetal fibronectin testing. Alternatively (or additionally) a further period of clinical observation may be equally appropriate.
  - Women who have a normal cervical length (≥ 30mm) in the setting of this cervical examination are at low risk for preterm birth.
    - It is estimated that 50% of women who present with symptoms of preterm labor will fall into this category. Their chance of delivering within one week is <2%
    - The fetal fibronectin does not add additional information regarding risk stratification in this situation.
    - These patients should be discharged home with precautions.

- **Fetal Fibronectin:**
  - The clinician should consider the individual’s preterm birth risk factors (i.e. prior pregnancy history), current gestational age, and presenting symptoms.
  - FFN by itself has not been shown to decrease the incidence of PTB or affect neonatal outcomes in women with symptoms of preterm labor

- **Clinical observation and repeat cervical examination:**
  - An alternative strategy is to continue to monitor the patient for 1-2 hours, and repeat the manual cervical examination after this monitoring period.
  - If there has been cervical change, the woman should be admitted and treated for preterm labor
  - If there has been no cervical change, discharge home with precautions is reasonable.

- In all cases, clinical judgment should be used to determine the best plan of care for each woman.
This algorithm and key driver material was written by a group of experts in the field of Preterm Birth. It was then reviewed by the Society for Maternal-Fetal Medicine’s (SMFM’s) Publications Committee, Executive Committee and Risk Management.

Standardization of healthcare processes and reduced variation has been shown to improve outcomes and quality of care. SMFM developed these documents to help facilitate the standardization process. These algorithms and key driver documents are “tools” to assist clinicians and practices. The practice of medicine continues to evolve, and individual circumstances may vary. They reflect clinical and scientific advances as of the date issued and are subject to change. They are not intended to dictate a certain management or course of action. We encourage users to adapt them to their particular situation, environment and patient population.

This publication is not expected to reflect the opinions of all members of the Society for Maternal-Fetal Medicine.