Learn simply

Preterm Labor

WORK HARD

Symptoms and/or signs of preterm labor[1,2]

Initial management

- Admit to Labor and Delivery
- **Confirm the diagnosis**[3]
- Confirm gestational age
- Document fetal wellbeing
- Examine for underlying causes of preterm labor[4]

Unable to confirm diagnosis

- Exclude cervical insufficiency
- Likely preterm contractions

Further management

- Discharge home
- Follow-up in 4–7 days
- Consider further screening with fFN and/or cervical length assessment[5]

Diagnosis of preterm labor confirmed

Contraindications to expectant management[6]

Consider immediate delivery

No contraindications to expectant management[6]

Further management depends on gestational age

Previable (<23–24 weeks)

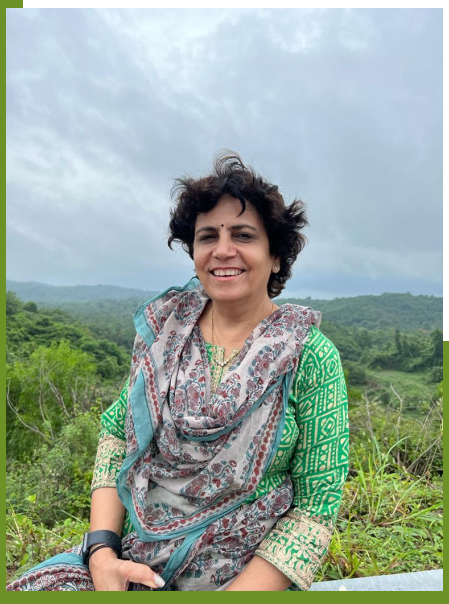
- Expectant management
- Consider MFM, anesthesia consults
- Check CBC, T&S, coagulation studies
- *No place for routine tocolytic therapy, antibiotics for GBS chemoprophylaxis or antenatal steroids*

24–34 weeks

- Inpatient management
- Bedrest, hydration[7]
- Consider MFM, anesthesia, neonatology consults
- **Check GBS carrier status**
- **Administer GBS chemoprophylaxis**[8]
- **Administer antenatal corticosteroids**
- Consider tocolytic therapy[9]
- Consider magnesium sulfate for fetal neuroprotection, if indicated[10]
- Consider serial fFN and/or cervical length screening[5]

≥34 weeks

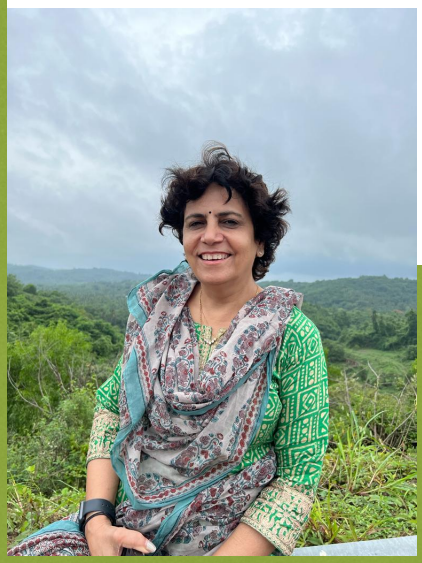
- Expectant management
- **Check GBS carrier status**
- **Administer GBS chemoprophylaxis**
- *No place for routine tocolytic or antenatal corticosteroid therapy*
- Neonatology consult
- Consider MFM, anesthesia consult



1. Labor is defined as an increase in myometrial activity resulting in effacement and dilation of the uterine cervix and delivery of the products of conception. Preterm labor refers to the onset of labor prior to 37 weeks of gestation. It occurs in 8–12% of deliveries, but accounts for > 85% of perinatal mortality.

2. Several risk factors for preterm birth have been identified (see Chapter 55, Screening for Preterm Birth). However, >50% of spontaneous preterm births occur in women with no apparent risk factors. Moreover, although obstetric care providers are getting better at identifying women at risk of preterm birth, it is not clear that this outcome can be prevented.

3. A definitive diagnosis of preterm labor is necessary before further treatment options are considered. Diagnosis requires the presence of both uterine contractions and cervical change (or, in nulliparous patients, an initial cervical exam >2 cm and/or >80% effacement in the setting of uterine contractions of increasing intensity and frequency). Uterine activity in the absence of cervical change should be regarded as preterm contractions, and does not require further treatment.



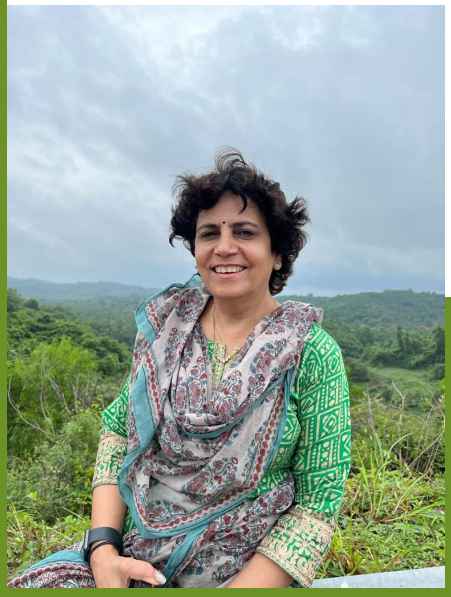
1. Preterm labor probably represents a syndrome rather than a diagnosis since the etiologies are varied.

2. Of all preterm births, 20% are iatrogenic and performed for maternal or fetal indications, such as diabetes, placenta previa or intrauterine growth restriction (IUGR).

3. A further 20–30% result from intra-amniotic infection/inflammation, 20–25% occur in the setting of preterm premature rupture of membranes (pPROM), and the remaining 25–30% are the result of spontaneous preterm labor.

4. Fetal fibronectin (fFN) testing and cervical length assessment to identify patients at risk of preterm birth
5. Contraindications to expectant management include intrauterine infection, nonreassuring fetal testing (“fetal distress”), unexplained vaginal bleeding, and intrauterine fetal demise or a lethal fetal anomaly.
6. Bedrest and hydration are commonly recommended in the setting of preterm labor, but without proven efficacy.

7. Screening for GBS carrier status and GBS chemoprophylaxis



1. Pharmacologic therapy remains the cornerstone of modern management of preterm labor. Although a number of alternative agents are now available (see table below), there are no reliable data to suggest that any of these agents is able to delay premature delivery for longer than a few days.

2. No single agent has a clear therapeutic advantage; as such, the side-effect profile of each of the drugs will often determine which to use in a given clinical setting.

3. The only agent approved by the FDA in the United States for the treatment of preterm labor is ritodrine hydrochloride (which is no longer on formulary in the USA). Maintenance tocolytic therapy beyond 48 hours has not been shown to confer any therapeutic benefit, but does pose a significant risk of adverse side effects.

4. The concurrent use of two or more tocolytic agents has not been shown to be more effective than a single agent alone, and the additive risk of side effects generally precludes this course of management. However, the use of sequential therapy (discontinuation of one agent followed by initiation of an alternative) may be beneficial.

5. Recent data suggest that very low birth weight infants (<1500 g, typically <32 weeks) exposed to IV magnesium sulfate 12–24 hours prior to delivery may be partially protected against neurologic injury, including cerebral palsy.

1. Common options for short-term tocolytic therapy
2. Route of administration Tocolytic agent (dosage) Major maternal side-effects Major fetal side-effects
    1. Magnesium sulfate IV (4–6 g bolus, then 2–3 g/h infusion) Nausea, ileus, headache, weakness, hypotension, pulmonary edema, cardiorespiratory arrestDecreased beat-to-beat variability, neonatal drowsiness, hypotonia, ?congenital ricketic syndrome

    2. β-Adrenergic agonists Terbutaline sulfate IV (2 ug/min infusion, max 80 ug/min) SC (0.25 mg q 20 min) Jitteriness, anxiety, restlessness, nausea, vomiting, rash, cardiac dysrhythmias, myocardial ischemia, palpitations, chest pain, hypotension, tachycardia, pulmonary edema, paralytic ileus, hypokalemia, hyperglycemia, acidosis Fetal tachycardia, hypotension, ileus, hyperinsulinemia, hypoglycemia, hyperbilirubinemia, hypocalcemia, ?hydrops fetalis

    3. Prostaglandin inhibitors Indometacin Oral (25–50 mg q 4–6 h) Rectal (100 mg q 12 h) Gastrointestinal effects (nausea, heartburn), rash, headache, interstitial nephritis, ?increased bleeding time Transient oliguria, oligohydramnios, ?necrotizing enterocolitis, ?intraventricular hemorrhage Premature closure of neonatal ductus arteriosus and persistent pulmonary hypertension
    4. Calcium channel blockersNifedipine Oral (20–30 mg q 4–8 h) Hypotension, reflex tachycardia, headache, nausea, flushing, potentiates the cardiac depressive effect of magnesium sulfate, hepatotoxicity