Antibiotic therapy in preterm labor

By Dr Shabani

Antibiotic therapy in preterm labor

- Although subclinical genital tract infection clearly contributes to the pathogenesis of preterm birth

- there is no evidence-based role for antibiotic therapy in the prevention of prematurity in patients with acute preterm labor

Antibiotic therapy in preterm labor

- 2013 meta-analysis evaluated the use of antibiotics as an adjunct to tocolysis for inhibiting preterm labor up to 36 weeks of gestation in women with intact membranes

- Similar rates of delivery within 48 hours or 7 days of initiating treatment, preterm birth less than 36 or 37 weeks, perinatal mortality, RDS, neonatal sepsis, and other neonatal morbidity

Antibiotic therapy in preterm labor

- Maternal infection, however, was significantly reduced in the antibiotic group (chorioamnionitis or endometritis relative risk 0.74, 95% CI 0.63-0.860

RISKS OF PROPHYLAXIS

- Exposure to broad spectrum intrapartum antibiotic prophylaxis has been associated with an increased risk of late-onset serious bacterial infections and infection with resistant organisms

- Thus far, no consistent trends have been identified

Antibiotic therapy in preterm labor

- lack of benefit from antibiotics because the subclinical infectious process leading to preterm labor may be too advanced for treatment to be effective by the time preterm labor is clinically apparent

- The inflammatory cascade has been triggered, it continue to amplify whether or not the inciting infection is treated.

Antibiotic therapy in preterm labor

- However, clinicians should be cautious before concluding there are no benefits from antibiotic therapy of preterm labor

- A subgroup of women who have subclinical intrauterine infection may benefit from treatment with antibiotics, as demonstrated in a primate model

NICE guideline

- Offer antibiotics during labour to women who:
- are in pre-term labour **or**

- have group B streptococcal colonisation, bacteriuria or infection during the current pregnancy **or**

NICE guideline

- Chorioamnionitis is a serious infection that needs to be treated with antibiotics to prevent harm to the mother

- The committee thought that it was important to make recommendations for antibiotic treatment that would simultaneously treat infection in the mother and prevent early-onset group B streptococcal infection in the baby to make the best use of antibiotics

GBS prophylaxis in Preterm labor

- Women admitted in preterm labor with a known positive GBS culture within the previous five weeks should be given GBS prophylaxis

GBS prophylaxis in Preterm labor

- Positive screening culture for GBS from either vagina or rectum **or**
- Positive history of birth of an infant with early-onset GBS disease **or**
- GBS bacteriuria (any colony count) during the current pregnancy **or**

GBS prophylaxis in Preterm labor

- **If colonization status is unknown**:
- GBS cultures are obtained at the time of presentation and then antibiotic prophylaxis is administered if the birth is potentially viable.

- If the patient is in true preterm labor, GBS prophylaxis is continued until she delivers
- If the patient is not felt to be in true labor, GBS prophylaxis should be discontinued

colonization status is unknown

- Unknown antepartum culture status (culture not performed or result not available) **plus**:
- Intrapartum fever (≥100.4°F [≥38°C]) **or**
- Preterm labor (<37+0 weeks of gestation) **or**
- Preterm prelabor rupture of membranes **or**
- Prolonged rupture of membranes (≥18 hours) **or**
- Intrapartum nucleic acid amplification test (NAAT) positive for GBS

Preterm prelabor rupture of membranes

- Women with intraamniotic infection (chorioamnionitis) typically receive broad spectrum antibiotic therapy

- This therapy should include an agent known to be active against GBS (typically a penicillin or cephalosporin) to replace GBS prophylaxis

Settings where antibiotic prophylaxis for GBS is not indicated

- Intrapartum antibiotic prophylaxis is **not** recommended for women with:
- Positive GBS culture in previous pregnancy but negative GBS culture within five weeks of delivery in the current pregnancy.
- Scheduled cesarean delivery – Women with a positive GBS culture who undergo scheduled cesarean delivery (at any gestational age) before onset of labor and with intact membranes are at very low risk of GBS

EVALUATION OF AMNIOTIC FLUID

- **INDICATIONS FOR EVALUATION OF AMNIOTIC FLUID FOR SUBCLINICAL INFECTION:**

- There is no consensus as to whether women in acute preterm labor should be evaluated routinely for subclinical intraamniotic infection or the appropriate tests for this diagnosis

EVALUATION OF AMNIOTIC FLUID

- Before or just after administering first-line tocolysis, we obtain amniotic fluid via amniocentesis for gram stain and glucose level in patients who are afebrile but have nonspecific laboratory or physical findings suggestive of infection, such as leukocytosis, unexplained maternal or fetal tachycardia, or uterine tenderness. We culture the fluid for aerobes, anaerobes, *Ureaplasma* species, and *Mycoplasma* species

EVALUATION OF AMNIOTIC FLUID

- We would not begin/continue the first tocolytic if the amniotic fluid tests are suggestive of subclinical infection

- Amniotic fluid cultures are positive in almost 65 percent of women in whom tocolysis with a single agent is not successful

EVALUATION OF AMNIOTIC FLUID

- For women who continue to contract after first-line therapy and have not been evaluated for subclinical infection, we perform amniocentesis for gram stain and glucose level before beginning a second-line tocolytic agent

- We would not begin a second tocolytic if the amniotic fluid tests are suggestive of subclinical infection

INEFFECTIVE APPROACHES

- **Progesterone:** Women in acute preterm labor do not benefit from progesterone

- **Bedrest, hydration, and sedation** : There is no convincing evidence that bedrest, hydration, or sedation is effective for prevention or treatment of preterm labor

- hospitalized bedrest increase the risk of thromboembolic events

SUMMARY

- **Goal of treatment** :
- Delay delivery that antenatal corticosteroids can be administered and achieve their maximal effect
- safe transport of the mother, if indicated
- prolong pregnancy when there are underlying, self-limited causes of labor, such as abdominal surgery, that are unlikely to cause recurrent preterm labor

SUMMARY

- For women with preterm labor <34 weeks of gestation, we suggest tocolytic therapy

- A delay in delivery for 48 hours for administration of antenatal steroids can provide benefit to the newborn

PTL management

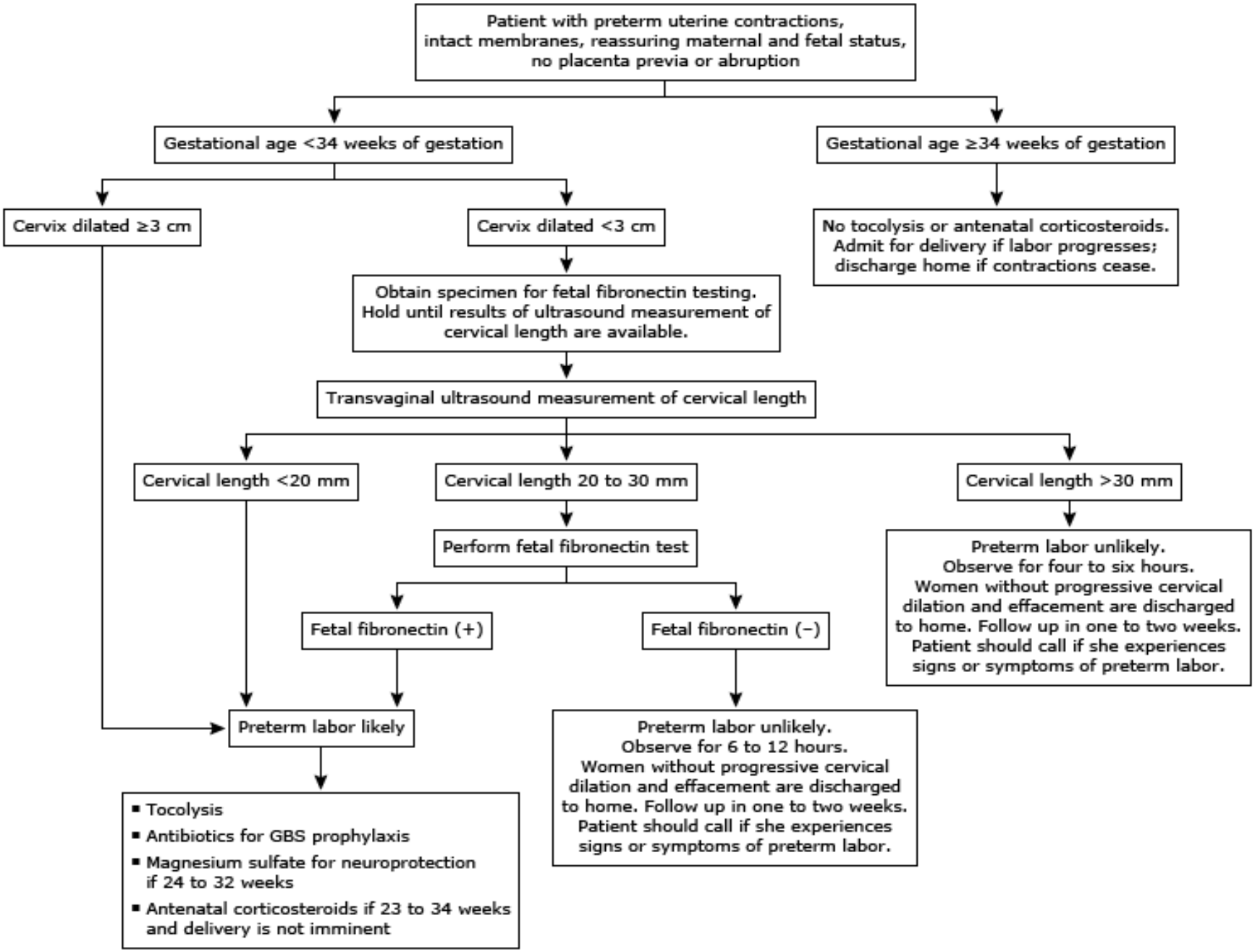
- For pregnancies ≥34 weeks of gestation, women without progressive cervical dilation and effacement after an observation period of four to six hours can be discharged to home, as long as fetal well-being is confirmed (eg, reactive nonstress test) and obstetric complications associated with preterm labor, such as abruptio placenta, chorioamnionitis, and preterm rupture of membranes, have been excluded. Women in preterm labor are admitted for delivery.

PTL management

- For pregnancies <34 weeks and cervical dilation ≥3 cm, we administer tocolytic drugs for up to 48 hours, antibiotics for group B streptococcal chemoprophylaxis (when appropriate), and antenatal betamethasone. Magnesium sulfate is administered for neuroprotection to pregnancies at 24 to 32 weeks of gestation

PTL management

- For pregnancies <34 weeks of gestation and cervical dilation <3 cm, transvaginal ultrasound measurement of cervical length and laboratory analysis of cervicovaginal fFN level help to support or exclude the diagnosis of preterm labor, as described in the algorithm
- For women diagnosed in preterm labor, we administer tocolytic drugs for up to 48 hours, antibiotics for group B streptococcal chemoprophylaxis (when appropriate), and antenatal betamethasone. Magnesium sulfate


Patient with preterm uterine contractions, intact membranes, reassuring maternal and fetal status, no placenta previa or abruption
Gestational age <34 weeks of gestation
Gestational age ≥34 weeks of gestation
Cervix dilated ≥3 cm
Cervix dilated <3 cm
No tocolysis or antenatal corticosteroids. Admit for delivery if labor progresses; discharge home if contractions cease.
Obtain specimen for fetal fibronectin testing. Hold until results of ultrasound measurement of cervical length are available.
Transvaginal ultrasound measurement of cervical length
Cervical length <20 mm
Cervical length 20 to 30 mm
Cervical length >30 mm
Perform fetal fibronectin test
Preterm labor unlikely. Observe for four to six hours. Women without progressive cervical dilation and effacement are discharged to home. Follow up in one to two weeks. Patient should call if she experiences signs or symptoms of preterm labor.
Fetal fibronectin (+)
Fetal fibronectin (−)
Preterm labor likely
Preterm labor unlikely. Observe for 6 to 12 hours. Women without progressive cervical dilation and effacement are discharged to home. Follow up in one to two weeks. Patient should call if she experiences signs or symptoms of preterm labor.
Tocolysis
Antibiotics for GBS prophylaxis
Magnesium sulfate for neuroprotection if 24 to 32 weeks
Antenatal corticosteroids if 23 to 34 weeks and delivery is not imminent

از توجه شما سپاسگزارم