Prevention of preterm birth in multiple pregnancy

Dr zahra shiravani

Preterm labor and delivery

- The major source of perinatal morbidity and mortality in twin gestations is spontaneous preterm birth

- 59 % before 37 completed weeks
- 11% percent before 32 completed weeks

- Male-male twin pairs seem to be at highest risk of preterm birth

Risk factors of preterm birth in twin pregnancy

- Multiple gestations that experience spontaneous reduction deliver earlier than nonreduced pregnancies with the same number of fetuses.

- Other risk factors for preterm birth, including the relationship between prior preterm birth and preterm birth in the current pregnancy

Prediction of preterm labor and delivery

- Do not routinely perform any tests in an attempt to identify asymptomatic twin pregnancies at highest risk for preterm labor and delivery

Tests that are proposed to prediction of preterm labor

- Although an elevated fetal fibronectin level
- short cervical length on ultrasound examination may predict pregnancies at particularly increased risk of preterm delivery,
- cervical length measurment is the preferred method of screening for preterm birth in twin ,25 mm is the cut-off most commonly used in the second trimester

- no intervention has been proven to be effective in reducing preterm birth rates and the predictive value is low in asymptomatic patients

Prediction of preterm labor and delivery

- Home uterine activity monitoring (HUAM) effectively detects contractions; however, there are no convincing data that use of HUAM results in an improvement any measure of neonatal outcome

Unproven interventions to prevent or delay preterm labor and delivery

- *Supplemental progesterone*
- *Bedrest*
- *Cerclage*
- *Tocolytics*
- *Pessary*

Supplemental progesterone

- The evidence does not support routine use of progesterone

- Whether progesterone supplemental improves pregnancy outcome in selected twin pregnancies, such as those with a short cervix, is under investigation

Bedrest

- Bedrest may be harmful:

- A population-based cohort study of pregnant women reported that antepartum hospitalization unrelated to delivery was associated with an increased the risk of venous thromboembolism during hospitalization and in the 28 days after discharge

Cerclage

Prophylactic cerclage

- systematic review of randomized trials comparing cervical cerclage with no cervical cerclage in multiple gestations did not provide convincing evidence that cerclage is an effective intervention for preventing preterm birth and reducing perinatal death or neonatal morbidity

Ultrasound-indicated cerclage

- In a meta-analysis of three trials with 49 twin gestations with short cervical length <25 mm before 24 weeks, cerclage did not reduce preterm birth (<28, 32, 34, or 37 weeks) compared with no cerclage,

Physical examination-indicated cerclage

- Physical examination-indicated cerclage **could be considered in twin pregnancies**

- According to UpToDate however, they will await prospective data prior to recommending cerclage for our patients.

Tocolytics

- There was no convincing evidence that prophylactic oral betamimetics reduced preterm birth in asymptomatic women with twin pregnancies (<37 weeks)

- Women with twin pregnancies appear to be at higher risk of pulmonary edema after administration of beta-adrenergic agents because they have a higher blood volume and lower colloid osmotic pressure than women carrying singletons.
- **Therefore, these drugs should be used judiciously in women with multiple gestations**

Pessary in unselected pregnancies

- ***Not reduce the risk of preterm birth***
- ***But the trial was underpowered to detect a modest benefit***

Pessary in pregnancies with a short cervix (≤25 mm) –

- Use of a pessary may prolong pregnancy in twin pregnancies with a short cervix

corticosteroids

- standard dosing
- one course
- between 23 and 34 weeks
- increased risk for preterm delivery within seven days

- ***Routine prophylactic administration to all twin pregnancies should be avoided***

rescue steroids

- single course
- in pregnancies <34 weeks
- at imminent risk of preterm delivery within the next seven days
- prior course of antenatal corticosteroids at least seven days previously

Magnesium sulfate for pregnancies at risk for preterm delivery

- reduce the severity and risk of cerebral palsy in infants if administered before preterm birth <32 weeks of gestation, regardless of fetal number

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حاملگی چند قلویی

نکته ۲ : موارد زیر در بارداری چند قلویی باعث کاهش زایمان زودرس نمی گردد بنابراین به صورت روتین توصیه نمی شود: استراحت در منزل، تجویز توکولیتیک خوراکی، عمل سرکلاژ (اندازه گیری طول سرویکس نیازی نیست مگر در موارد پر خطر)، تجویز پروژسترون خوراکی و تزریقی، تجویز کورتیکواستروییید بدون هدف

Triage twin pregnancies

- The prediction of preterm birth based on cervical length measurement

- The optimal cervical length threshold appears to be higher due to the higher baseline risk for preterm birth in twins compared with singletons

≥34 weeks of gestation

- are admitted for delivery.
- After an observation period of four to six hours, women without progressive cervical dilation and effacement are discharged to home, as long as fetal well-being is confirmed (eg, reactive nonstress test) and obstetrical complications associated with preterm labor, such as abruptio placenta, chorioamnionitis, and preterm rupture of membranes, have been excluded.
- We arrange follow-up in one to two weeks and give the patient instructions to call if she experiences additional signs or symptoms of preterm labor, or has other pregnancy concerns (eg, bleeding, rupture of membranes, decreased fetal activity).

<34 weeks of gestation

with uterine contractions,

cervical dilation ≥3 cm supports the diagnosis of preterm labor;

further diagnostic evaluation with sonographic measurement of cervical length or laboratory assessment of fetal fibronectin does not enhance diagnostic accuracy. Treatment of preterm labor is initiated

The diagnosis of preterm labor is less clear in women with contractions,

cervical dilation <3 cm, and intact membranes,

transvaginal ultrasound measurement of cervical length

Women with cervical length >35 mm

no change over six hours

low risk for preterm delivery,

can be discharged home after a four- to six-hour period of observation, as long as fetal well-being is confirmed, maternal status is stable, and there are no additional maternal concerns.

Women with cervical length <25 mm

high risk of preterm delivery, and thus we begin interventions to reduce morbidity associated with preterm birth.

Women with cervical length 25 to 35 mm on transvaginal ultrasound examination

undergo fetal fibronectin testing.

If the test is positive, we begin interventions to reduce morbidity associated with preterm birth.

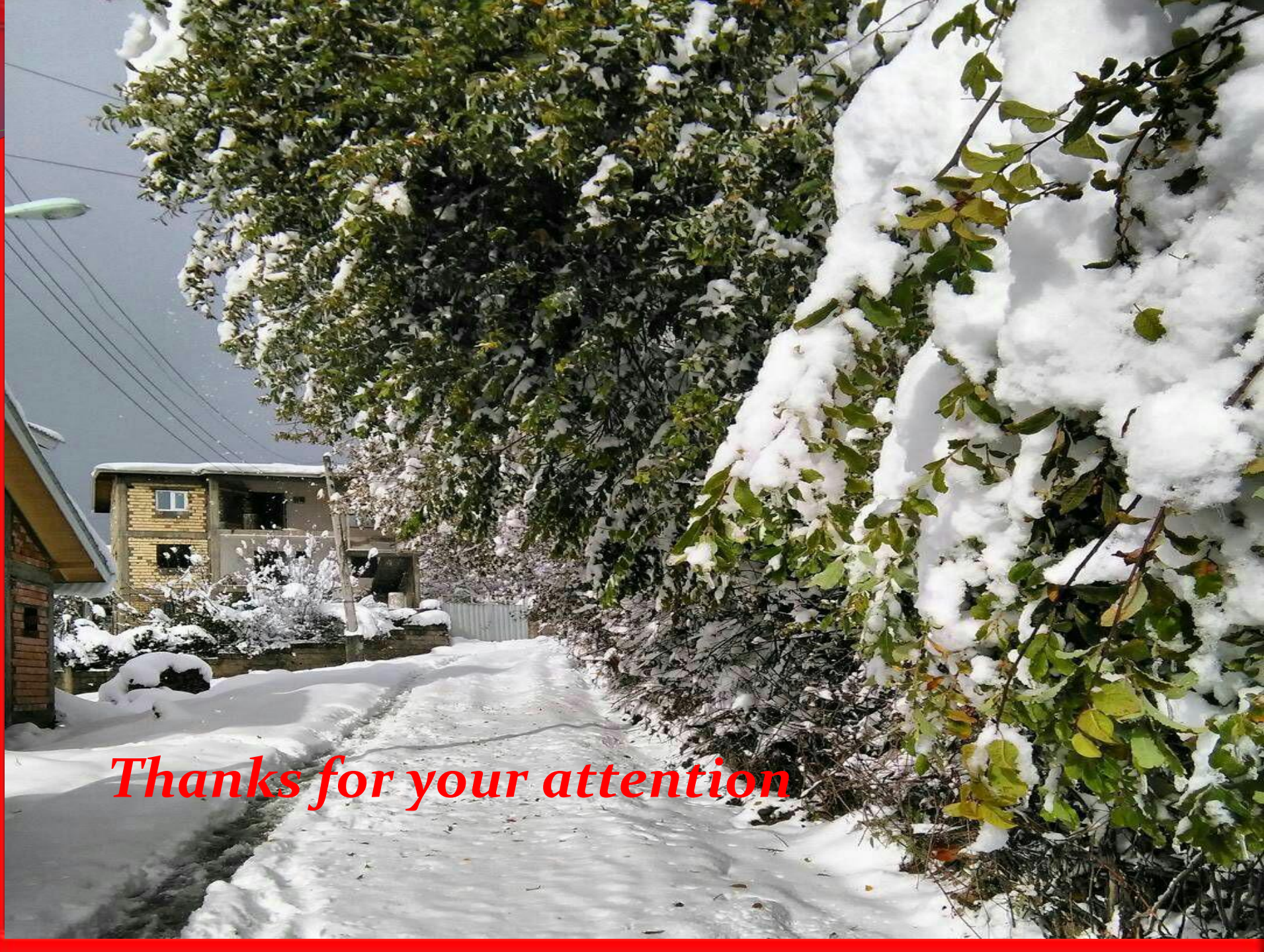
If the test is negative, we discharge the patient after a 6- to 12-hour period of observation

Treatment of women <34 weeks with suspected preterm labor

- hospitalize women diagnosed with preterm labor <34 weeks:
- A course of **betamethasone**. A single rescue course of antenatal steroids is indicated for pregnancies <34 weeks of gestation that are at risk of preterm delivery within the next seven days and had a course of antenatal corticosteroids at least 14 days previously and at ≤28 weeks of gestation
- **Tocolytic** drugs for up to 48 hours to delay delivery so that betamethasone given to the mother can achieve its maximum fetal effect. Inhibition of acute preterm labor and management of pregnancies after successful inhibition are reviewed separately.
- **GBS chemoprophylaxis**.
- **Magnesium sulfate** for pregnancies at 24 to 32 weeks of gestation.

Take home massage

- The predictive value of an elevated fetal fibronectin level or short cervical length on ultrasound is low in asymptomatic patients.
- No intervention has been proven to be effective in reducing preterm birth in twin pregnancy.
- There is no effective strategy to prevent PTB in twin pregnancy.
- Bed rest, progesterone therapy , cervical pessary or oral tocolytic do not reduce the risk of PTB so they are not recommended.


Thanks for your attention