به نام خدا

Prediction and Prevention of Spontaneous Preterm Birth

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Preterm birth is among the most complex and important challenges in obstetrics

Its rates have been increasing

Four direct causes of preterm birth:

1. Spontaneous unexplained preterm birth with intact membranes(45%)
2. Idiopatic PPROM(30-35%)
3. Delivery for maternal or fetal indications(35%)
4. Twins or higher order multifetal birth

Factors Associated With Spontaneous Preterm Birth

There are many risk factors for PTB : Demographics and characteristics,

social and economic factors, medical complications, obstetric history,

and conditions specific to the current pregnancy

But two-thirds of PTBs occur among women with no risk factors

- REPRODUCTIVE HISTORY

History of spontaneous preterm birth

History of indicated preterm birth

History of abortion

- GENETIC FACTORS
- AGE
- CERVICAL SURGERY
- UTERINE MALFORMATIONS
- CHRONIC MEDICAL DISORDERS
- PREVIOUS INFANT WITH SUDDEN INFANT DEATH SYNDROME
- ASSISTED REPRODUCTION
- MULTIFETAL GESTATION
- VAGINAL BLEEDING IN EARLY PREGNANCY
- SHORT CERVIX

❖ DILATED CERVIX

❖ INFECTION

Asymptomatic bacteriuria

Periodontal disease

Genital tract infection

❖ BEHAVIOR

Short interpregnancy interval
Occupational physical activity
Exercise
Coitus
Substance use

❖ DIET

❖ WEIGHT AND WEIGHT CHANGES

- HEIGHT
- STRESS
- ENVIRONMENT
- SUBOPTIMAL PRENATAL CARE
- SUBOPTIMAL PRENATAL CARE
- PRETERM LABOR
- FETAL FACTORS
- PATERNAL RISK FACTORS

Strategies to Assess Risk of Preterm Birth

- Assessment of cervical length in the second trimester has been shown to identify women at increased risk for preterm birth
- Cervicovaginal fetal fibronectin (fFN) can be a useful biomarker for predicting PTB within 7 to 14 days in women with contractions and mild cervical dilation
- Multifactorial risk scoring systems

- Wireless technologies

second trimester evaluation of cervical length for prediction of spontaneous preterm birth

Cervical shortening (ie, effacement) is one of the first steps in the processes leading to labor and can precede labor by several weeks

Identification of women with a short cervix is important because treatment with vaginal progesterone can reduce their risk of spontaneous preterm birth

The diagnosis of short cervix is based on cervical length ≤25 mm at 16 to 24 weeks of gestation

UNIVERSAL VERSUS SELECTIVE CERVICAL LENGTH SCREENING

restricting screening to women with historical risk factors for preterm birth would miss about 40 percent of women with a short cervix and thus at risk for preterm birth

We perform universal cervical length screening based, in part, on a large study in which the introduction of universal cervical length screening in singleton gestations without prior spontaneous preterm birth was associated with a significant decrease in the frequency of spontaneous preterm birth <37 weeks of gestation (4.8 versus 4.0 percent; adjusted odds ratio [AOR] 0.81, 95% CI 0.75-0.89), <34 weeks (1.3 versus 1.0 percent; AOR 0.78, 95% CI 0.66-0.93), and <32 weeks (0.7 versus 0.5 percent; AOR 0.76, 95% CI 0.60-0.95)

●Society for Maternal-Fetal Medicine (SMFM) – The SMFM recommends routine transvaginal ultrasound cervical length screening between 16 and 24 weeks of gestation for women with a singleton pregnancy and history of prior spontaneous preterm birth. They consider screening reasonable for women with a singleton pregnancy and no history of prior spontaneous preterm birth but have not recommended routine screening for this population. They recommend not performing routine cervical length screening for women with a cervical cerclage, preterm premature rupture of membranes, or placenta previa. They also noted that available data did not indicate adequate clinical benefit to justify routine screening of all women with multiple gestations,

●American College of Obstetricians and Gynecologists (ACOG) – In a practice bulletin on preterm birth, ACOG neither mandated universal routine cervical length screening in women without a prior spontaneous preterm birth nor recommended against such screening. However, in women undergoing obstetrical ultrasound examination, ACOG has recommended that the cervix be examined when technically feasible .

●International Federation of Gynecology and Obstetrics (FIGO) – FIGO recommends sonographic cervical length screening in all women 19+0 to 23+6 weeks of gestation using transvaginal ultrasound [47]. Women with a cervical length ≤25 mm should be treated with daily vaginal progesterone.

توضیحات

* آسپیرین روزانه ۸۰ میلی گرم در مادران با سن ۴۰ سال یا بیشتر، حاملگی اول، فاصله بین دو بارداری بیش از ۱۰ سال، نمایه توده بدنی ۳۵ و بالاتر، سابقه فامیلی پره اکلامپسی از ۱۲ هفتگی تا تولد تجویز شود.

** در موارد دوقلویی مونو کوریون احتمال سندرم TTTS وTRAP وجود دارد.

نکته ۱ : در موارد گزارش دو قلوهای به هم چسبیده یا حاملگی مولار در یکی از قل ها ادامه مراقبت ها توسط پریناتالوژیست انجام شود.

نکته۲ : موارد زیر در بارداری چند قلو نباید انجام 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

Which patients should be screened with cervical sonography to assess their risk of preterm birth?

Patients With a Singleton Pregnancy with No Prior Spontaneous Preterm Delivery:

Regardless of the uncertainty about the utility of universal endovaginal cervical length screening for the prevention of preterm birth, ***the cervix should be visualized as part of the 18 0/7–22 6/7 weeks of gestation anatomy assessment*** . If on transabdominal ultrasonography a short cervix is found or suspected, endovaginal ultrasonography is recommended to more accurately assess cervical length

Screening of cervical length with serial endovaginal ultrasonography is not indicated in pregnant individuals without a prior preterm birth

Patients With a Singleton Pregnancy and a Prior Spontaneous Preterm Delivery

Women with a prior spontaneous preterm birth are at high risk for recurrent preterm birth

Because of the relatively high detection rate and predictive value in individuals with prior preterm birth, and because treatment is available, serial endovaginal ultrasound measurement of cervical length beginning at 16 0/7 weeks of gestation and repeated until 24 0/7 weeks of gestation for individuals with a singleton pregnancy and a prior spontaneous preterm birth is recommended

Patients With a Multiple Gestation

In twin pregnancies, a shortened cervix in the second trimester is more common than in singleton pregnancies, and a short cervix is a predictor of early preterm birth

As with singleton pregnancies, the cervix should be visualized as part of the 18 0/7–22 6/7 weeks of gestation anatomy assessment (93). If on routine transabdominal ultrasonography a short cervix is found or suspected, endovaginal ultrasonography is recommended to more accurately assess cervical length

Patients With a History of a Medically Indicated Preterm Delivery

women with a medically indicated preterm birth before 35 weeks of gestation in their first pregnancy had 10 times higher odds of another preterm birth than women who had not

Although there appears to be an increased risk of spontaneous preterm birth in individuals with a prior medically indicated preterm birth, there is insufficient evidence to support a recommendation that these individuals undergo serial cervical length surveillance in future pregnancies.

Should patients undergo screening for bacterial vaginosis during pregnancy for the purpose of preventing preterm birth?

For the purpose of prevention of preterm birth, screening and antibiotic treatment for bacterial vaginosis in pregnant individuals without symptoms of vaginitis is not recommended

there may be benefits to early screening and treatment of bacterial vaginosis in asymptomatic pregnant women who have a history of a previous preterm delivery

What interventions reduce the risk of preterm birth in patients with a short cervix, singleton pregnancy, and no history of preterm birth?

Vaginal Progesterone

- Vaginal progesterone has been studied extensively as a treatment to reduce the risk of preterm birth in asymptomatic women with a singleton pregnancy, short cervix, and no prior preterm birth
- vaginal progesterone is recommended for asymptomatic individuals without a history of preterm birth with a singleton pregnancy and a short cervix.

Intramuscular Progesterone

Intramuscular 17-OHPC is not recommended for prevention of preterm birth in patients who do not have a history of spontaneous preterm delivery

Cervical Cerclage

Cervical cerclage is of uncertain effectiveness in patients with a short cervix and no history of preterm birth.

However, there is evidence of potential benefit in patients with a very short cervical length.

How should the current pregnancy be managed in a patient with a prior spontaneous preterm delivery?

Progesterone Supplementation

Patients with a singleton pregnancy and a prior spontaneous preterm birth should be offered progesterone supplementation (either vaginal or intramuscular) in the context of a shared decision-making process incorporating the available evidence and the patient's preference

starting 17-OHPC earlier in the 16 0/7–20 6/7 weeks of gestation period is more effective than starting later

Cervical Length Monitoring and Subsequent Intervention

A short cervix in the second trimester is a strong predictor of preterm birth in patients with a prior preterm delivery

cerclage and vaginal progesterone are both effective for patients with a singleton pregnancy and a history of a preterm birth who also have a short cervix.

Patients with a singleton gestation, prior spontaneous preterm birth, and a short second-trimester cervix cerclage may be offered in addition to continuation of progesterone.

Does cerclage placement, cervical pessary, or progesterone treatment decrease the risk of preterm birth in patients with multiple gestations?

Progesterone Treatment

Intramuscular 17-OHPC is not recommended for prevention of preterm birth based solely on the indication of multiple gestation

7-OHPC may be beneficial to individuals with a prior preterm birth and a current dichorionic twin gestation

Routine prophylactic use of vaginal progesterone to prevent preterm birth in twin pregnancies is not recommended

Cerclage

Prophylactic Cerclage:

Cervical cerclage is not recommended for prevention of preterm birth based solely on the indication of multiple gestation.

Ultrasound-Indicated Cerclage

Due to the small sample sizes of the studies as well as their methodologic limitations, there are insufficient data to recommend for or against cervical cerclage for patients with a multiple gestation and a short cervix on ultrasonography in the second trimester

Does activity restriction reduce the risk of preterm birth?

Activity restriction is not recommended to reduce the risk of preterm birth.

Summary of Recommendations

- Because of the relatively high detection rate and predictive value in individuals with prior preterm birth, and because treatment is available, serial endovaginal ultrasound measurement of cervical length beginning at 16 0/7 weeks of gestation and repeated until 24 0/7 weeks of gestation for individuals with a singleton pregnancy and a prior spontaneous preterm birth is recommended.
- For the purpose of prevention of preterm birth, screening and antibiotic treatment for bacterial vaginosis in pregnant individuals without symptoms of vaginitis is not recommended.

- Vaginal progesterone is recommended for asymptomatic individuals without a history of preterm birth with a singleton pregnancy and a short cervix.
- Intramuscular 17-OHPC is not recommended for prevention of preterm birth in patients who do not have a history of spontaneous preterm delivery.
- Patients with a singleton pregnancy and a prior spontaneous preterm birth should be offered progesterone supplementation (either vaginal or intramuscular) in the context of a shared decision-making process incorporating the available evidence and the patient's preferences.
- Cervical pessary is not recommended for prevention of preterm birth in twin pregnancies with a short cervix

با تشکر از توجه شما