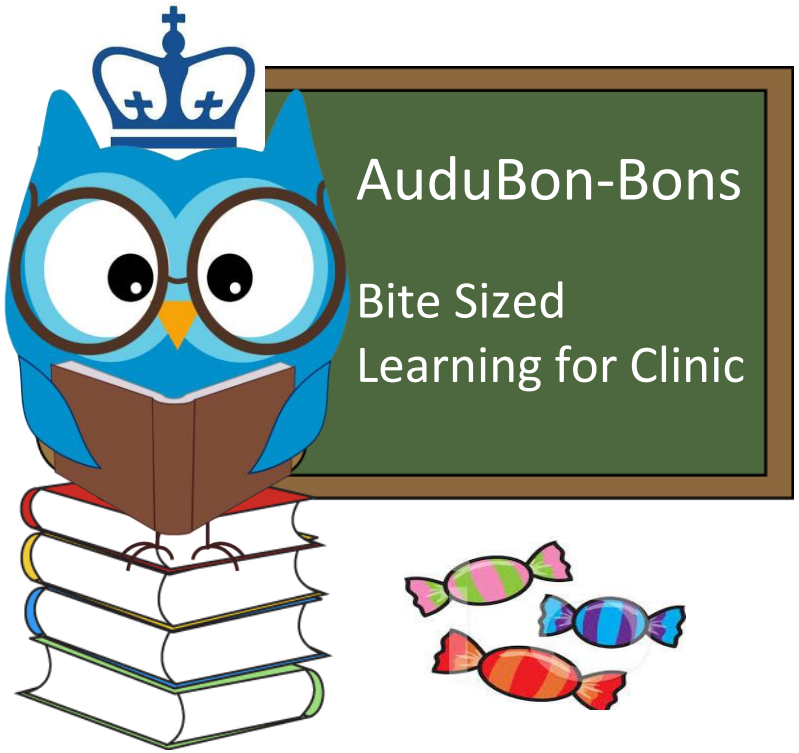
PRETERM BIRTH - RISK ASSESSMENT/PREVENTION



Week 83

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Reading Assignment:
Practice Bulletin #130, Oct 2012
Prediction and Prevention of Preterm Birth

Also suggested:
Practice Advisory: Clinical Guidance for Integration of the Findings of the PROLONG Study: Progestin's Role in Optimizing Neonatal Gestation

LEARNING OBJECTIVES

- To be able to identify and stratify factors that increase the risk of preterm delivery
- To gain an understanding of the role of progesterone in prevention of preterm birth
- To review the recommendations for use progesterone, cervical length screening, and cerclage placement
- To be comfortable counseling the patient about her risk factors and treatment plan

CASE VIGNETTE

- Ms. P.T. is a 36 y.o. G3P0111 woman at 8 weeks 3 days EGA by first trimester ultrasound who presents for an initial prenatal visit.

- She reports some mild nausea and vomiting, which is well-managed by modifying her diet and meal portions. She denies any pain or vaginal bleeding. This pregnancy was planned and she's very excited.

FOCUSED HISTORY

What elements of the patient's history are most important?

- POB: **2015 - 1 PT NSVD 32w4d after PPROM at 30 weeks**
  2018 - 1 SAB at 6w3d
- PGYN: Regular menses; No STI/Cysts/Fibroids; No abnormal paps
- PMH: Denies
- PSH: Denies
- Meds: PNV
- All: NKDA
- FHx: No significant history
- Soc: No toxic habits

PERTINENT PHYSICAL EXAM FINDINGS

- What will be pertinent in her physical exam?
  - VS: P 76 BP 117/74 Wgt: 55kg Hgt: 160cm BMI: 21.5
  - Cor: Regular rhythm, no M
  - Pulm: CTAB b/l
  - Abd: Soft, NT/ND, +BS x 4Q
  - Pelvic: Vulva: Normal external female genitalia; No lesions
    Vagina: Healthy-appearing mucosa, No discharge
    Cervix: Parous os; L/C/P
    Uterus: NT, ~8wk size, anteverted
    Adnexae: No mass/tenderness b/l
  - Ext: No calf tenderness b/l

DEFINITION

- **How is spontaneous preterm birth defined?**
  - Any birth prior to 37 completed weeks following:
    - Preterm labor
    - Preterm PROM
    - Cervical insufficiency

RISK ASSESSMENT

- **What places a patient at risk for spontaneous delivery of a preterm infant?**
  - **History**
    - Prior history of preterm birth
      - Most important historical risk factor
      - Also affected by # preterm births & gestational age at prior delivery
    - Cervical/Uterine instrumentation
      - Prior LEEP or CKC
      - Associated with risk, but studies are conflicting
    - Behavioral
      - Substance abuse, Smoking
  - **Objective findings**
    - Shortened CL on TVS
    - Low pre-pregnancy weight
    - Short IPI

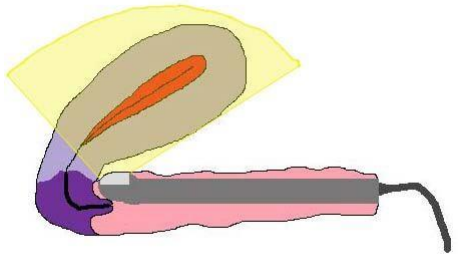
<2.5cm before 24 weeks

History of preterm birth confers a 1.5-fold to 2-fold increased risk in subsequent pregnancies

CERVICAL LENGTH

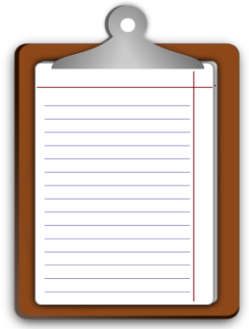
- **What is the proper way to measure cervical length on TVS?**
  - **Positioning**
    - How should you place the probe?
  - **Measurement**
    - How do you obtain the CL?

Place the probe in the anterior fornix of the vagina after the patient has emptied her bladder



Documented CL will be the shortest of three measurements taken between calipers at internal os and external os

EVALUATION



- **Since our patient's prior delivery meets criteria for a spontaneous preterm birth, what are the key components of her evaluation?**
  - Detailed history of prior pregnancy
  - Review of risk factors
  - Determine if she is a candidate for prophylactic interventions

MANAGEMENT

- **What interventions are available to prevent preterm birth for this pregnancy?**
  - Weekly IM Progesterone supplementation
    - Starting 16-24 weeks until 36 weeks
  - Cervical length screening
    - Q 2 weeks starting at 16 weeks until 24 weeks
  - Cerclage placement
    - CL <25mm before 24 weeks + prior preterm birth was <34 weeks

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Perinatal consult to start progesterone

UNIVERSAL SCREENING

- **If this patient had no risk factors, what screening modality, if any, would be appropriate?**

ACOG The American College of Obstetricians and Gynecologists — Reasonable to do routine screening of cervical length in second trimester

COLUMBIA | COLUMBIA UNIVERSITY IRVING MEDICAL CENTER — Universal screening is offered to all patients

- **What CL measurement would be an indication for intervention with such a patient?**

ACOG The American College of Obstetricians and Gynecologists — CL ≤ 20mm before or at 24 weeks

COLUMBIA | COLUMBIA UNIVERSITY IRVING MEDICAL CENTER — CL <25mm before or at 24 weeks

  - **What would be the appropriate intervention for these findings?**
    - Vaginal progesterone (200mg) nightly
    - CL Q1-2 weeks until 24 weeks

MULTIPLE GESTATIONS

- **Does current data support progesterone or cerclage placement for the reduction of preterm birth in patient with a multifetal gestation regardless of prior preterm birth?**
  - No
  - Patients may be offered progesterone based on a shared decision-making model or as a study participant

PROLONG Trial

- Your patient says she Googled progesterone and read about something called the PROLONG Trial. She is concerned about taking progesterone since it may not make a difference.
- **How do you counsel her?**
  - The study showed no difference in preterm birth between patients who did and did not receive progesterone
  - However, the authors who did the study think it was not as strong as it could have been
  - At this time, the national practice guidelines DO NOT recommend changing our practice of offering progesterone to a patient with risk factors

KEY POINTS

- Singleton gestation with a prior spontaneous preterm birth
  - Offer IM progesterone supplementation beginning at 16-24 weeks
- Singleton gestation with NO prior spontaneous preterm birth + incidental finding of CL <25mm at or before 24 weeks
  - Offer vaginal progesterone
- Multifetal gestation
  - Progesterone or cerclage are NOT recommended as an intervention regardless of prior history of preterm birth
- PROLONG Trial
  - ACOG is not changing clinical recommendations at this time

SOCIAL DETERMINANTS OF HEALTH

Women living in neighborhoods with a low SES are significantly more at risk for SPTB, independent of their young age or non-Western background.

Significant disparities in birth outcomes exist based on race and/or ethnicity. Rates of preterm birth, low birthweight and infant mortality are significantly greater for black non-Hispanic infants than for white non-Hispanic or Hispanic infants

Efforts should be made by governmental and medical professionals to address this issue and develop intervention programs to reduce SPTB in low SES communities

EPIC .PHRASE

.BBonPTB

Description: Preterm birth risk counseling and management

Patient has a history of a prior preterm birth at *** weeks. A prior preterm birth at an early gestational age is a strong risk factor for recurrent preterm delivery, including the possibility of earlier delivery. The patient will be referred to perinatal clinic for consult and evaluation for 17-OHP injections. We discussed the potential benefit for weekly 17-hydroxyprogesterone therapy starting at 16 weeks to decrease this risk. The patient was counseled that if she chooses to have 17-OHP injections, we will initiate therapy between 16 and 18 weeks and continue weekly injections through 36 weeks.

CODING AND BILLING

DIAGNOSIS	ICD-10
Personal history of preterm labor	Z87.51
Preterm labor	O60
Incompetence of cervix uteri	N88.3

EVIDENCE

- References

- Prediction and prevention of preterm birth. Practice Bulletin No. 130. American College of Obstetricians and Gynecologists. Obstet Gynecol 2012;120:964-73
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- Meis PJ, Klebanoff M, Thom E, Dombrowski MP, Sibai B, Moawad AH, et al. Prevention of recurrent preterm delivery by 17 alpha-hydroxyprogesterone caproate [published erratum appears in N Engl J Med 2003;349:1299]. N Engl J Med 2003;348:2379-85
- Klumper, J., Ravelli, A.C., Roos, C. and Oudijk, M.A., 2020. 125: Low socio-economic status is associated with a higher rate of spontaneous preterm birth. *American Journal of Obstetrics & Gynecology*, *222*(1), p.S96.
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