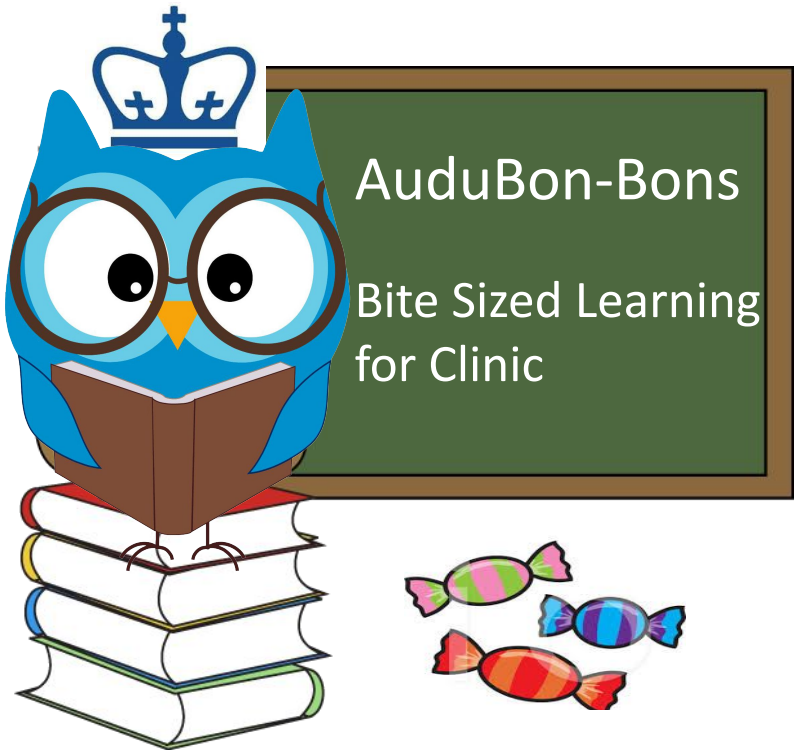
PNC – PREECLAMPSIA RISK AND PREVENTION

Week 4



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Reading Assignment:
Committee Opinion #743, July 2018
Low-Dose Aspirin Use During Pregnancy

LEARNING OBJECTIVES

- To be able to identify and stratify factors that increase the risk of developing preeclampsia
- To gain an understanding of the role of aspirin in preventing preeclampsia
- To review the recommendations for use of prophylactic low-dose aspirin for each risk group
- To be comfortable counseling the patient about her risk factors and treatment plan

CASE VIGNETTE

- Ms. Dulce Buho is a 36 y.o. G3P0111 woman at 8 weeks 3 days by 1st 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 will be pertinent in her history?

  - POB: 2015 - 1 PT NSVD 34w4d after IOL for PEC + SF 2018 - 1 SAB at 6w3d
  - PGYN: Regular menses; No STI/Cysts/Fibroids; No abnormal paps
  - PMH: Obesity
  - PSH: Denies
  - Meds: PNV
  - All: NKDA
  - FHx: No history of bleeding disorders, No gyn cancer

PERTINENT PHYSICAL EXAM FINDINGS

- What will be pertinent in her physical exam?
  - VS: P 76 BP 117/74 Wgt: 82kg Hgt: 160cm BMI: 32
  - 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; +1 DTR b/l

RISK ASSESSMENT

- What are the risk factors for preeclampsia and how are they classified?
  - High Risk:
    - History of preeclampsia, especially when accompanied by an adverse outcome
    - Multifetal gestation
    - Chronic hypertension
    - Type 1 or 2 DM
    - Renal disease
    - Autoimmune disease (SLE, APLS)

RISK ASSESSMENT

- Moderate Risk
  - Nulliparity
  - Obesity (BMI > 30)
  - Family history of PEC (mother or sister)
  - Sociodemographic characteristics (African American race, low SES)
  - Age ≥ 35
  - Personal history factors (e.g. LBW/SGA, previous adverse pregnancy outcome, >10-year IPI)
- Low Risk
  - Previous uncomplicated full-term delivery

EVALUATION

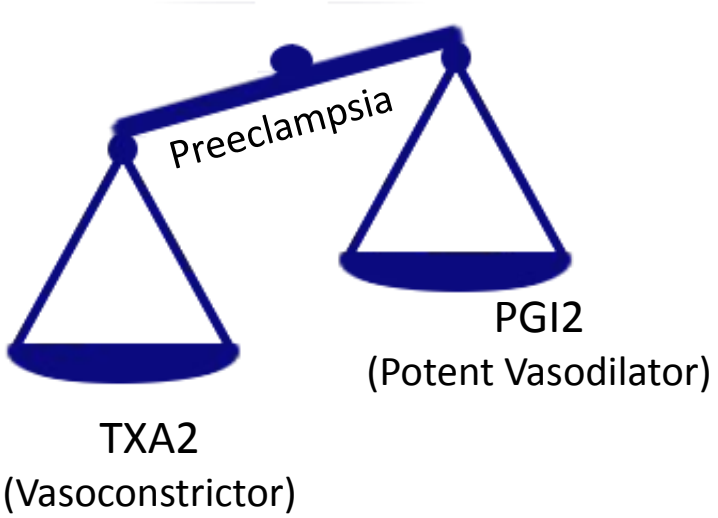
- What additional labs may be ordered at the initial prenatal visit in a patient with any high risk factors?
  - Serum aspartate aminotransferase and alanine aminotransferase
  - Blood urea nitrogen
  - Serum creatinine
  - Serum electrolytes
  - Spot urine protein/creatinine ratio or 24-hour urine for total protein and creatinine as appropriate

ASPIRIN FOR PREECLAMPSIA PREVENTION

- 2013
  - ACOG recommends daily low-dose ASA (60-80 mg/day) for women with a history of early-onset preeclampsia and PTD at <34 weeks or >1 prior pregnancy complicated by preeclampsia
- 2014
  - USPSTF recommends the use of low-dose aspirin (81 mg/day) as preventive medication after 12 weeks of gestation in women who are at high risk for preeclampsia
    - More expansive list of indications
    - Also suggested daily low-dose aspirin be considered in women with “several” moderate risk factors

ASPIRIN FOR PREECLAMPSIA PREVENTION

- Explain the rationale for the use of aspirin to prevent preeclampsia.



TXA2 and PGI2 production are regulated by COX-1

Low-dose ASA selectively inhibits COX-1

No effect on vascular wall production of PGI2

Decreased platelet synthesis of TXA2

MANAGEMENT

- What is the dosing and time frame jointly recommended by ACOG and SMFM for aspirin prophylaxis in pregnancy to prevent preeclampsia?
  - Dosage
    - Low-dose aspirin (81 mg/day)
  - Initiation
    - Between 12 weeks and 28 weeks of gestation (optimally before 16 weeks)
  - Continuation
    - Daily until delivery

PATIENT SELECTION

- How is risk factor stratification applied to select appropriate candidates for prophylactic low-dose aspirin?

- **High Risk Factors**:
  - Recommend low-dose ASA if the patient has one or more

- **Moderate Risk Factors**:
  - Consider low-dose ASA if the patient has more than one

- **Low Risk Factors**:
  - Do not recommend low-dose aspirin

PATIENT SELECTION

- Are there any contraindications to aspirin use in pregnancy?
  - History of aspirin allergy
  - Hypersensitivity to NSAIDs
  - Nasal polyps

COUNSELING

- How will you counsel this patient on your plan?
  - Why do I need it?
  - Is it safe to take?
  - Is it safe for my baby?

SOCIAL DETERMINANTS OF HEALTH

2020 - Analysis of health disparities related to maternal hypertensive disorders

- African American, Hispanic, and Native American women were at risk for late entry into clinical care, and African American women alone were at a significantly higher risk for maternal mortality
- Factors that may influence delays include experiences of institutional racism in both accessing and receiving prenatal care as well as elevated inflammatory markers of stress in women seeking care while in the presence of healthcare providers

- These disparities highlight the need for intervention in the community setting, in the form of reproductive health education for women planning to become pregnant as well as an early clinical intervention for all women who are pregnant.
- Better knowledge of women's views towards accessing clinical care throughout the continuum of pregnancy can assist in the development of strategies to eradicate these barriers and potentially reimagine a care delivery model that serves pregnant women from all backgrounds

EVIDENCE

Reference

- Harris, M., Henke, C., Hearst, M. and Campbell, K., 2020. Future directions: analyzing health disparities related to maternal hypertensive disorders. Journal of pregnancy, 2020.

EPIC Phrase

- .BBonASAPregnancy
- Description: Aspirin for preeclampsia prevention counseling
- The patient was counseled on her specific risk factors for developing preeclampsia, as well as a brief description of preeclampsia and associated signs and sylmptoms. She was advised that per ACOG recommendations, taking 81mg ASA daily reduces the risk of preeclampsia and associated sequelae, including fetal growth restriction and preterm delivery. She was counseled that the ideal time to initiate 81mg ASA is between 12-16 weeks gestation, and that it should be continued until delivery.

EVIDENCE

- References

- Chronic hypertension in pregnancy. ACOG Practice Bulletin No. 203. American College of Obstetricians and Gynecologists. Obstet Gynecol 2019;133:e26–50.
- Gestational hypertension and preeclampsia. ACOG Practice Bulletin No. 202. American College of Obstetricians and Gynecologists. Obstet Gynecol 2019;133:e1-25.
- LeFevre ML. Low-dose aspirin use for the prevention of morbidity and mortality from preeclampsia: U.S. Preventive Services Task Force recommendation statement. U.S. Preventive Services Task Force. Ann Intern Med 2014;161:819–26
- Low-dose aspirin use during pregnancy. ACOG Committee Opinion No. 743. American College of Obstetricians and Gynecologists. Obstet Gynecol 2018;132:e44–52.