Welcome to the Pregnancy Medical Home “First Tuesdays” Webinar: Management of Hypertensive Disorders of Pregnancy

Webinar will begin at 7:30am
Connect to audio by computer
Submit any questions through chat

Funding for this project is provided in part by The Duke Endowment
CCNC network OB champions collaborate to create evidence-based clinical guidance for maternity care providers, in order to promote best practices and improve quality and outcomes.

Currently available PMH Care Pathways:

- Hypertensive Disorders of Pregnancy
- Induction of Labor in Nulliparous Patients
- Perinatal Tobacco Use
- Postpartum Care and the Transition to Well Woman Care
- Progesterone Treatment and Cervical Length Screening
- Substance Use in Pregnancy

https://www.communitycarenc.org/population-management/pregnancy-home/pmh-pathways/
Management of Hypertensive Disorders of Pregnancy

Lydia Wright, MD
Medical Director, Wilmington Maternal Fetal Medicine
Medical Director of Obstetrics, New Hanover Regional Medical Center

Funding for this project is provided in part by The Duke Endowment
Learning Objectives

By the end of this session, participants will be able to:

1- List the 2 main goals of the ACOG Task Force recommendations.

2- List the 3 categories of Hypertensive Disorders of Pregnancy and give their definitions.

3- List general recommendations for timing of delivery for each category of Hypertension in Pregnancy.

4- Know the critical BP that defines severe hypertension.

5- Be able to advise patients on the current recommendations for future pregnancy.

Funding for this project is provided in part by The Duke Endowment
Background

▪ Hypertensive disorders are the leading cause of iatrogenic preterm birth

▪ Pregnancy Medical Home Care Pathway incorporates ACOG Task Force 2012 guidance

▪ Two goals:
  ▪ Manage patients with gestational hypertension or preeclampsia without severe features to 37 weeks in absence of other complications
  ▪ Expectant management for patients with severe features to 34 weeks with care in appropriate setting
Hypertensive Disorders of Pregnancy

- **Gestational hypertension**: Systolic BP ≥140 mmHg or diastolic BP ≥ 90 mmHg taken on 2 occasions > 4 hours apart, in the absence of proteinuria or severe features occurring after 20 weeks gestation in a woman with previously normal blood pressure.

- **Preeclampsia (with or without severe features)**: Systolic BP ≥ 140 mmHg or diastolic BP ≥ 90 mmHg taken on 2 occasions > 4 hours apart with new onset proteinuria or with severe features (BP criteria SBP ≥ 160 or DBP ≥ 100 taken on 2 occasions > 4 hours apart.

- **Chronic hypertension with superimposed preeclampsia**: The onset of proteinuria in a woman with preexisting hypertension, sudden increase in proteinuria if already present in early gestation, sudden increase in hypertension or development of severe features.
Definitions

**Proteinuria**: >300mg of protein in a 24-hour timed urine collection or protein/creatinine ratio ≥ 0.3mg/dL or dipstick reading of 1+ if quantitative methods not available

**Severe features:**

- Severe hypertension: systolic BP ≥ 160mmHg or diastolic BP ≥ 110 mmHg taken on 2 occasions
- Thrombocytopenia: platelet count <100,000/mm3
- Impaired liver function: abnormally elevated liver enzymes (to twice normal concentration).
- New onset renal insufficiency: serum creatinine > 1.1 mg/dL or doubling of the serum creatinine from baseline
- Pulmonary edema
- New onset visual or cerebral disturbances
Accurate BP

Funding for this project is provided in part by The Duke Endowment
Hypertensive Disorders of Pregnancy

- **Gestational hypertension**: Systolic BP ≥140 mmHg or diastolic BP ≥ 90 mmHg taken on 2 occasions > 4 hours apart, in the absence of proteinuria or severe features occurring after 20 weeks gestation in a woman with previously normal blood pressure.
Management of Gestational Hypertension

- Close monitoring for the development of preeclampsia, particularly proteinuria
- Weekly NST or BPP
- Only use oral anti-hypertensive medications in those with severe hypertension*
- Indication for delivery: Gestational age greater than or equal to 37 0/7 weeks gestation
Goals of ACOG Task Force

- Manage patients with gestational hypertension or preeclampsia without severe features to 37 weeks in absence of other complications
- Expectant management for patients with severe features to 34 weeks with care in appropriate setting
Hypertensive Disorders of Pregnancy

- **Preeclampsia without severe features:** Systolic BP $\geq 140$ mmHg or diastolic BP $\geq 90$ mmHg taken on 2 occasions $> 4$ hours apart with new onset proteinuria.

- **Chronic hypertension with superimposed preeclampsia***: The onset of proteinuria in a woman with preexisting hypertension, sudden increase in proteinuria if already present in early gestation, sudden increase in hypertension.
Management of Preeclampsia WITHOUT Severe Features

- Outpatient management with close follow-up or inpatient in a facility with obstetrical services available
- Evaluation at least 2x/week for evidence of severe features by measurement of blood pressure and review of symptoms
- Fetal testing: daily fetal kick counts and BPP or NST at least 2x/week
- Assessment of amniotic fluid volume weekly
- Ultrasound at 2-3 week intervals to evaluate fetal growth
- Laboratory testing at diagnosis and repeated with changes in clinical characteristics or at least weekly
- *Timed urine collection not warranted once preeclampsia is diagnosed
- *Use of oral antihypertensives only in those with severe hypertension
Management of Preeclampsia WITHOUT Severe Features

- Indications for delivery:
  - Gestational age ≥ 37 weeks
  - Nonreassuring fetal testing
  - Consider consultation for any patient <37 0/7 weeks of gestation with additional clinical complications, such as PPROM, fetal growth restriction, suspected abruption

- Mode of delivery: vaginal preferred, cesarean only for usual obstetric indications

- Seizure prophylaxis:
  - Data unclear about use of magnesium sulfate for preeclampsia without severe features (evidence solid for severe features)
  - If used, continue 12-24 hours postpartum or until urine output is at least 150ml/hour for 3 hours
Severe Hypertension

SBP 160 or higher
DBP 110 or higher
Goals of ACOG Task Force

- Expectant management for patients with severe features to 34 weeks with care in appropriate setting
Management of Preeclampsia WITH Severe Features

▪ Initial assessment (maternal) - inpatient
  ▪ Assess urine output, initiate 24 hour collection of urine for protein
  ▪ Laboratory evaluation: CBC with platelets, LFTs, creatinine
  ▪ Antihypertensive therapy indicated for sustained systolic BP ≥ 160mm Hg or diastolic BP ≥ 110 mm Hg
  ▪ Magnesium sulfate for seizure prophylaxis

▪ Initial assessment (fetal)
  ▪ Continuous fetal monitoring as appropriate for gestational ages 24 0/7 – 33 6/7 weeks
  ▪ Ultrasound for estimated fetal weight and presentation
  ▪ Antenatal corticosteroids initiated prior to 34 0/7 weeks gestation
Management of Preeclampsia WITH Severe Features

- Gestational age ≥34 weeks: delivery at hospital with appropriate levels of maternal and neonatal support
- Gestational age < 34 weeks: admit for evaluation
  - Consider transfer to a center with appropriate level of maternal and neonatal support, including Maternal-Fetal Medicine consultation
- Patient should be counseled about options: expectant management vs. delivery
  - Expectant management benefits the fetus by increasing gestational age at delivery, and carries some risk to the mother
  - Maternal risks (incidence): HELLP syndrome (20%), eclampsia (2%), pulmonary edema (5%), acute renal failure (2%)
  - Fetal risks (incidence): worsening fetal condition (40%), placental abruption (rare), fetal death (rare)
Management of Preeclampsia WITH Severe Features

- Severe hypertension, controlled with antihypertensive medication, is not an indication for delivery prior to 34 0/7 weeks
  - If severe hypertension cannot be controlled with antihypertensive medication, then delivery is indicated
- The amount of proteinuria by itself is not an indication for delivery in women with early onset of preeclampsia with severe features
- Fetal death is an absolute contraindication to expectant management for severe disease in singleton pregnancies
Treat Severe Hypertension

SBP 160 or higher
DBP 110 or higher
Emergent Therapy for Acute-Onset, Severe Hypertension During Pregnancy and the Postpartum Period
Treatment of severe range BP’s

- IV labetalol
- IV hydralazine
- If IV access is not established, po nifedipine

Keep order sets simple and accessible!
Stress with the team rapid assessment and treatment!

Goal: SBP 140-159 *not normal range! DBP 90-100
Low Dose Aspirin

- Low-dose aspirin (81mg) for women at moderate or high risk for preeclampsia.
  - Initiate by 16 weeks of gestation, continue through 36 weeks.
  - US Preventive Services Task Force: “high risk” (early onset, prior adverse outcome, multifetal gestation, cHTN, T1DM, T2DM, renal disease, autoimmune disease) vs moderate risk factors: (nulliparity, BMI >30, family hx of preeclampsia, “sociodemographic characteristics”, age 35 or older, personal hx factors)
  - USPSTF recommends treat women at high risk and consider in women with “several” moderate risk factors.
    - PMH pathway recommendation: treat if 2+ risk factors
Low Dose Aspirin

- Decreases the risk for development of preeclampsia in moderate and high risk women (intent to treat ~ 59-167 to prevent 1 case)
- Decreases the risk for preterm birth (intent to treat ~ 44-200 to prevent 1 case)
- Decreases the risk for perinatal death (intent to treat ~ 125- >10,000 to prevent 1 case)
- Stop aspirin 5-10 days prior to expected delivery
Long term maternal outcomes

Preeclampsia is a screening test for future health:

- Recurrent preeclampsia
- CHTN (4-fold)
- Ischemic heart disease (2-fold)
- CVA (2-fold)
- VTE (2-fold)
- All cause mortality (1.5-fold)

Barton, Sibai 2008
Craici 2008
Learning Objectives

Participants can:

1- List the 2 main goals of the ACOG Task Force recommendations.

2- List the 3 categories of Hypertensive Disorders of Pregnancy and give their definitions.

3- List general recommendations for timing of delivery for each category of Hypertension in Pregnancy.

4- Know the critical BP that defines severe hypertension.

5- Be able to advise patients on the current recommendations for future pregnancy.

Funding for this project is provided in part by The Duke Endowment
References

Questions?

Lydia Wright, MD
Wilmington Maternal Fetal Medicine
Wilmington, NC