Chronic Hypertension in Pregnancy-Guidelines for Management

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I have no commercial disclosures or potential conflicts of interest

How would you manage this case?

- 15 weeks GA
- G3 P2
- Initial PN visit
- Chronic HBP
- Consult re: Meds
- On Enalapril (Vasotec) for HBP
- Wants to know if she should switch and why
- What happens if you do not?

Objectives-At the end of this presentation, the participant will know:
- Understand the effects of chronic hypertension on pregnancy
- Understand new terminology and criteria for defining and diagnosing chronic hypertension
- Understand what we know and do not know about management and treatment

How would you manage this case?

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- Was induced for pre-eclampsia
- NSVD
- MgSO4 stopped yesterday
- Ready to go home and BP is 160/110
- Occasional headache
- LFTs and platelets normal
National High Blood Pressure Education Program Working Group Report on High Blood Pressure in Pregnancy
http://hin.nhlbi.nih.gov/nhbpep.htm
(NIH publication No. 00-3029, July 2000)

Results of ACOG Task Force On Hypertension In Pregnancy

Eenie, Meenie, Mini, Mo, what does the NEW evidence really show about Chronic Hypertension?

Other Important Take Home Points
- Screening tests to predict other than medical history not recommended yet
- Medical history of preeclampsia and PTB at <34 0/7 wks or in more than I prior pregnancy administer, low dose aspirin in first trimester

Other Important Take Home Points
- Preeclamptic with systolic BP <160 mm and a diastolic BP < 110 mm and no maternal symptoms, MgSO4 not universally administered
- Preeclamptic not delivered nor determined by amount of proteinuria

Other Important Take Home Points
- Preeclamptic before viability, deliver after maternal stabilization. Poor maternal outcome if you do not.
- Administer MgSO4 if severe preeclampsia, eclampsia, during C-delivery and intrapartum.
Other Important Take Home Points

- HELLP syndrome before fetal viability and at 34 0/7 wks deliver after stabilization.

- HELLP syndrome between fetal viability and 34 0/7 wks and stable delay delivery for 24-48 hours to complete steroids.

Classification Unchanged

- Preeclampsia–eclampsia
- Chronic Hypertension
- Chronic Hypertension with superimposed preeclampsia
- Gestational Hypertension

Chronic Hypertension In Pregnancy Definition

- HBP present before pregnancy or before 20 weeks of gestation
- Up to 5% of pregnant women
- HBP predates pregnancy
- First trimester BP normal and HBP before 20 weeks GA then could be gestational HBP or early preeclampsia

Chronic Hypertension In Pregnancy Definition

- HBP is defined as either a systolic BP of 140 mm Hg, or diastolic BP of 90 mm Hg or greater or both or both
- Mild to Moderate-140-159 or 90-109
- Severe-160 or higher-110 or higher
- Most have essential HBP

Chronic Hypertension In Pregnancy Definition

- Easy to dx when present prepregnancy and on medication
- Most likely diagnosis when HBP occurs during first trimester
- Patients who present late and develop HBP in third trimester may also have chronic HBP as may those normal during pregnancy but HBP postpartum

Chronic Hypertension In Pregnancy Maternal and Neonatal Outcome

- Increased risk for preeclampsia
- Superimposed preeclampsia in 13-40%
- Depends on dx criteria, etiology, duration and severity
- Those with superimposed preeclampsia have higher rate
- Those with chronic HBP have greater risk for C/S, PPH, GDM, abruption and hospitalized for HBP
Chronic Hypertension In Pregnancy
Maternal and Neonatal Outcome
- Higher perinatal mortality
- Fetal growth restriction
- Most medications safe but risk of effect on fetal growth is still controversial

Chronic Hypertension In Pregnancy
Preconception Counseling
- Include explanation of the risks associated with chronic HBP
- Educate about signs and symptoms especially early ones of preeclampsia
- Stop meds with known fetal effects especially ACE inhibitors and angiotensin receptor blockers

Chronic Hypertension In Pregnancy
Antepartum Management
- R/O secondary HBP especially CKD and refer to physician with expertise if necessary
- Baseline serum creatinine, electrolytes, uric acid, liver enzymes, platelet count and urine protein
- ECHO and or ECG if more than 4 years

Chronic Hypertension In Pregnancy
Findings Suggestive of Secondary HBP
- Resistant HBP
- Hypokalemia <3.0 mEq/L
- Elevated serum creatinine > 1.1 mg/dL
- Strong family history of kidney disease

Chronic Hypertension In Pregnancy
Monitoring Blood Pressure
- Monthly BP checks
- Especially after 20 weeks GA
- Use home BP monitoring especially for those with chronic HBP and monitoring treatment
- Helpful especially when ruling out or confirming “while coat hypertension”.

Chronic Hypertension In Pregnancy
Nonpharmacologic Treatment
- No to weight loss
- No to extremely low salt diet <100 mEq/d
- Yes to exercise if accustomed and BP is well controlled
**Chronic Hypertension In Pregnancy**

**Pharmacologic Treatment**

- Start treatment if systolic BP 160 mm or greater or diastolic BP 105 mm or higher.
- If less than these parameters and no evidence of end organ damage than no treatment indicated.
- If on medication, BP maintained between 120 mm systolic and 80 mm diastolic and 160 mm systolic and 105 mm diastolic.

**Do not use ACE inhibitors, angiotensin receptor blockers, renin inhibitors and mineralocorticoids receptors antagonist in women of reproductive age.**

**Daily low-dose aspirin (60-80mg) in women with chronic HBP at greatest risk (previous PTL or preeclampsia).**

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### Doses of Common Drugs

#### Antepartum or Postpartum

<table>
<thead>
<tr>
<th>Drug</th>
<th>Dosage</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methyldopa</td>
<td>0.5-3 g/d orally in 2 to 3 divided doses</td>
<td>Safe but not always effective</td>
</tr>
<tr>
<td>Nifedipine</td>
<td>30-120 mg/d orally of slow acting</td>
<td>Not sublingual</td>
</tr>
</tbody>
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### Doses of Common Oral Drugs

#### Antepartum or Postpartum

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<tr>
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<tbody>
<tr>
<td>Labetalol</td>
<td>200-2,400 mg/d orally in 2 to 3 divided doses</td>
<td>Not in asthmatic</td>
</tr>
<tr>
<td>Thiazide Diuretic</td>
<td>Depends on agent</td>
<td>Second line agent</td>
</tr>
</tbody>
</table>

### Acute Treatment and Control of Severe Hypertension

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<tr>
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<th>Starting Dose</th>
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<tr>
<td>Hydralazine</td>
<td>5 mg IV or IM then 5-10 mg IV q 20-40 min</td>
<td>Higher or frequent doses cause hypotention</td>
</tr>
<tr>
<td>Labetalol</td>
<td>10-20 mg IV then 20-80 mg q 20-30 min to a max dose of 300 mg</td>
<td>First-line agent unless not available; fewer adverse side effects</td>
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<tr>
<td>Nifedipine</td>
<td>10-20 mg po, repeat in 30 minutes prn then 10-20 mg q 2-6 hours</td>
<td>May observe reflex tachycardia and headache</td>
</tr>
</tbody>
</table>
Chronic Hypertension In Pregnancy  
**Fetal Surveillance**  
- Ultrasound to screen for IUGR  
- Risk of IUGR high 8-15%  
- Early detection probably improves perinatal outcome  
- Antenatal fetal testing (NST, BPP or modified BPP) if any issues  
- Doppler velocimetry if evidence of IUGR

**Chronic Hypertension In Pregnancy**  
**Intrapartum Management**  
- Chronic isolated uncomplicated HBP and no maternal or additional fetal complications then delivery before 38 0/7 weeks is NOT recommended

**Chronic Hypertension In Pregnancy**  
**Superimposed Preeclampsia**  
- The patient with chronic HBP develops preeclampsia  
- Can be challenging to diagnose  
- Frequently overdiagnosed  
- Two groups  
- Superimposed preeclampsia  
- Superimposed with severe features

**Treatment of Chronic Hypertension**  
**and Superimposed Preeclampsia**  
- Antenatal Corticosteroids  
- No MgSO4 unless S and S promonitory of eclampsia e.g. neurologic symptoms, clonus or RUQ pain.  
- Expectant management until 37 0/7 GA

**Diagnosis of Chronic Hypertension**  
**and Superimposed Preeclampsia With Severe Features**  
- Any of these:  
  - Sudden increase in BP  
  - Thrombocytopenia  
  - Elevated liver enzymes  
  - New onset or worsening renal insufficiency  
  - Pulmonary edema  
  - Persistent cerebral or visual disturbances

**Treatment of Chronic Hypertension**  
**and Superimposed Preeclampsia with Severe Features**  
- Administer MgSO4  
- Delivery soon after maternal stabilization of  
  - HBP  
  - Eclampsia  
  - Pulmonary Edema  
  - Abruptio  
  - DIC  
  - Nonreassuring fetal status
Mgt of Chronic Hypertension In The Postpartum Period
- Adjust medication to keep BP <160/100mm
- Avoid use of nonsteroidal antiinflammatory agents
- MgSO4 when indicated because of superimposed preeclampsia
- If necessary refer to hypertension specialist

Chronic Hypertension In Pregnancy Breastfeeding
- Encourage
- Not contraindication due to antihypertensive meds
- No clinical trials to say otherwise
- Breastfeed

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Thank You For Listening To Me

Questions?