Hypertension Management in Pregnancy

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Etiology & Definition

- Complicates 10-20% of pregnancies
- BP ≥140 mmHg systolic and/or ≥90 mmHg diastolic, on two measurement at least 6 hours apart.
- BP between 140/90 mm Hg and <160/110 mm Hg considered non severe hypertension in pregnancy.
- BP level of ≥160/110 mm Hg associated with increased risk of maternal stroke in pregnancy and therefore considered the diagnostic threshold of severe hypertension in pregnancy.***(Obstetrics Emergency)***

Risk Factors for Hypertension in Pregnancy

- Nulliparity
- Preeclampsia in a previous pregnancy
- Age >40 years or <18 years
- Family history of pregnancy-induced hypertension
- Chronic hypertension or Chronic renal disease
- Vascular or connective tissue disease
- Diabetes mellitus (pregestational and gestational)
- Multifetal gestation , High body mass index
- Hydrops fetalis

Categories:

- Chronic Hypertension
- Gestational Hypertension
- Preeclampsia/ HELLP
- Preeclampsia superimposed on Chronic Hypertension

Chronic Hypertension

- **"Preexisting Hypertension"**
- ***Definition***
  - Systolic pressure ≥ 140 mmHg, diastolic pressure ≥90 mmHg, or both.
  - Presents before 20th week of pregnancy or persists longer then 12 weeks postpartum.
- ***Causes***
  - Primary = "Essential Hypertension"
  - Secondary = (ie: renal disease)

Treatment for Chronic Hypertension in pregnancy

- Avoid treatment with uncomplicated HTN , it may decrease as pregnancy progresses.
- May discontinue medications with blood pressures less than 120/80 in 1st trimester.
- Initiate therapy if diastolic pressures >95 mmHg, systolic pressures >150 mmHg.
- Medication choices = Oral methyldopa and labetalol.

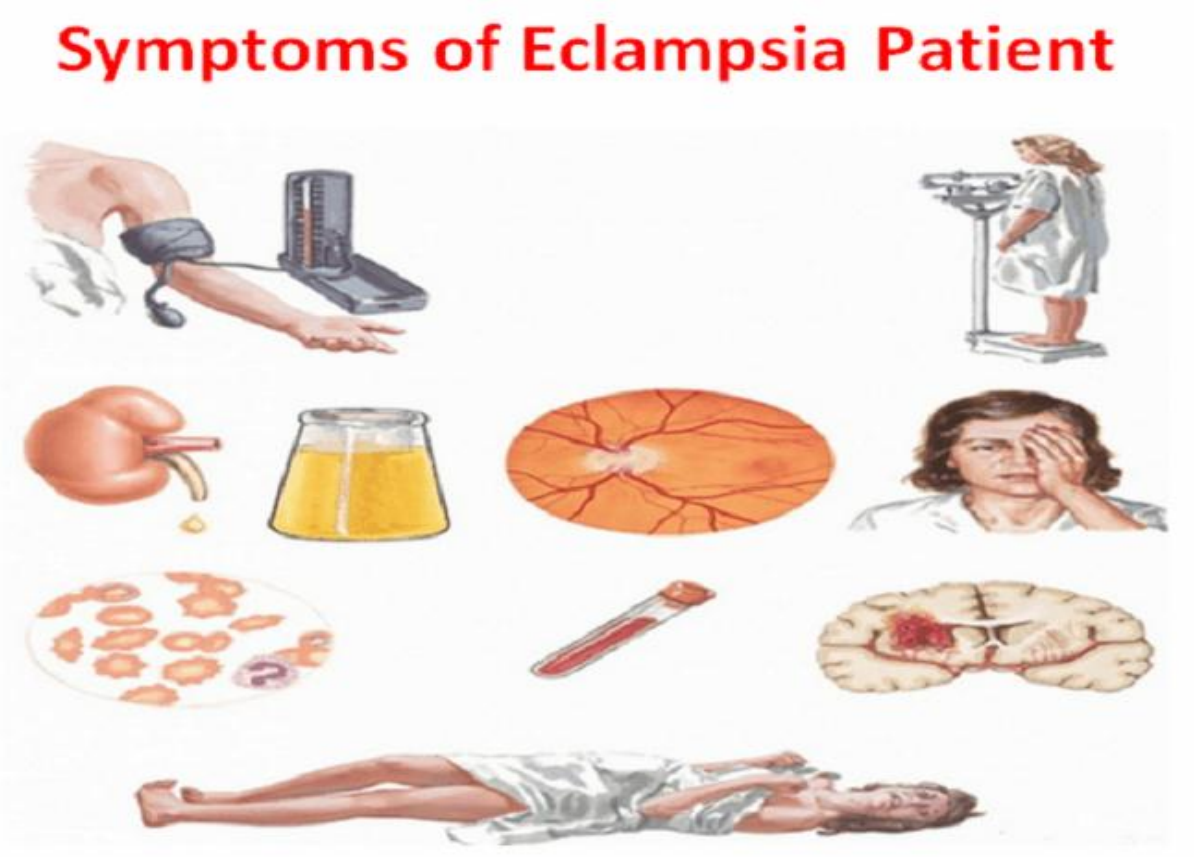
Preeclampsia/HELLP syndrome

- ***Definition*** = New onset of hypertension and proteinuria after 20 weeks of gestation. Occurs in 6-8% of pregnancies.
- Systolic blood pressure ≥140 mmHg OR diastolic blood pressure ≥90 mmHg
- Proteinuria of 0.3 g or greater in a 24-hour urine specimen
- Preeclampsia before 20 weeks, think MOLAR PREGNANCY!

Preeclampsia:

- **Categories :**
  - Mild Preeclampsia
  - Severe Preeclampsia
- ***Eclampsia:***
- Occurrence of generalized convulsion and/or coma in the setting of preeclampsia pregnant woman , with no other neurological condition causes the the problem . ***It is life threatening condition.***

Sings & symptoms



Preeclampsia :

- ***Severe : must have one of the following S/S :***
- **Blurred vision, scotomata, altered mental status, severe headache**
- **Right upper quadrant or epigastric pain**
- **Nausea, vomiting**
- ***Hemolysis***
- **Elevated Serum transaminase concentration at least twice normal**

Preeclampsia :

- ***Systolic BP ≥160 mmHg or diastolic ≥110 mmHg on two occasions at least six hours apart***
- **Thrombocytopenia = <100,000 platelets per cubic millimeter (HELLP Syndrome)**
- **Proteinuria = 5 Grams or more in 24 hours**
- **Oliguria <500 mL in 24 hours**
- **Severe fetal growth restriction**
- **Pulmonary edema or cyanosis**
- **Cerebrovascular accident**

Preeclampsia superimposed on Chronic Hypertension

- Affects 10-25% of pregnant patients with chronic HTN
- ***Preexisting Hypertension with these additional s/s :***
  - New onset proteinuria
  - Hypertension and proteinuria beginning prior to 20 weeks of gestation.
  - A sudden increase in blood pressure.
  - Thrombocytopenia.
  - Elevated aminotransferases.

Treatment of Preeclampsia :

- ***Definitive Treatment = Delivery***
- Major indication for antihypertensive therapy is prevention of stroke.
- Diastolic pressure ≥105-110 mmHg or systolic pressure ≥160 mmHg
- ***Choices of drug therapy:***
  - Acute – IV labetalol, IV hydralazine, IRO Nifedipine
  - Long-term – Oral methyldopa or labetalol

Gestational Hypertension

- ***Mild hypertension without proteinuria or other signs of preeclampsia.***
- **Develops in late pregnancy, after 20 weeks gestation.**
- **Resolves by 12 weeks postpartum.**
- ***Can progress onto preeclampsia:*** **Often when hypertension develops <30 weeks gestation.**
- **Indications and choice of antihypertensive therapy are the same as with preeclampsia.**

Evaluation of Hypertension in Pregnancy

- **History** : ID , S/S of Preeclampsia , Past Medical , Family ,and Obstetrical Hx, Medications, Allergies , prenatal
- **Physical** : Vital signs , Vision , Cardiovascular, Respiratory, Abdominal , Neuromuscular , Edema
- **Laboratory** : CBC (Hgb, Plts) , Renal Function, Liver Function , Coagulation, Urine Protein (Dipstick, 24 hour)

Management of Hypertension in Pregnancy

- ***Depends on severity of hypertension and gestational age!!!!***
- ***Observational Management***
- **Restricted activity of the mother on her left side**
- **Close Maternal and Fetal Monitoring**
  - **BP Monitoring**
  - **S/S of preeclampsia**
  - **Fetal growth and well being (U/S)**
  - **Routine weekly or biweekly blood tests**

Management of Hypertension in Pregnancy

- ***Medical Management First line Therapy*** Acute Therapy
  - Hydralazine 5 or 10 mg IV , 10 mg , or 20 mg adverse effect : maternal hypotension Systolic BP 90 or less .
  - Labetalol : 20 – mg IV, then 40 mg , 80 mg , adverse effect : neonatal bradycardia , and avoided in asthma , heart disease, congestive heart failure .
  - IRO Nifedipine 10mg , 20mg when IV not available . Associated with and increase in maternal heart rate
  - Expectant Therapy = Oral Labetalol, Methyldopa, Nifedipine , second line therapy .

Management of Hypertension in Pregnancy

- ***Eclampsia prevention :*** **MgSO4 is not recommended as anti hypertensive , but remain drug of choice for seizure prophylaxis with acute-onset severe hypertension during pregnancy and postpartum . Dose 6 Grams IV and should not be delayed .**
- ***Contraindicated antihypertensive drugs***
  - **ACE inhibitors and Angiotensin receptor antagonists**
- **Risk reduction and successful safe clinical outcomes** ***require appropriate and prompt management of sever systolic and sever diastolic HTN .***

Management of Hypertension in Pregnancy

- ***Proceed with Delivery***
  - Vaginal Delivery VS Cesarean Section
  - **Depends on severity of hypertension!**
  - May need to administer antenatal corticosteroids depending on gestation!
- ***Only cure is DELIVERY!!!***

Thanks for your attention