Hypertension During Pregnancy

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Introduction

- In 2019 The WHO reported that hypertension affects 1 of every 5 women worldwide.

- At the same year , the ESC repots that hypertension is the most common health problem during pregnancy affecting 5 to 10 % of pregnant ladies worldwide

Definition of hypertension in pregnancy

- **Office/hospital blood pressure reading , documented in at least two occasions at least 6 hours apart.**

- Systolic Blood pressure **>= 140 mmHg**
- And /Or
- Diastolic Blood Pressure **>=90 mmHg**

Classification of hypertension during pregnancy

1.Pre-existing Hypertension

2.Gestational Hypertension

3.Pre-eclampsia/Eclampsia

4.Pre-existing HTN with superimposed gestational HTN with proteinuria

1.Pre-existing HTN

- precedes pregnancy or develops before 20 weeks of gestation, usually persists longer than 12 weeks post partum

- May be
- Primary (Essential)
- OR
- Secondary

2.Gestational Hypertension

- This is hypertension without proteinuria or other signs of preeclampsia
- Develops after 20 weeks of gestation , usually resolves by 12 weeks postpartum .
- May progress into Preeclampsia

3.Pre-eclampsia/Eclampsia

- Preeclampsia is newly developed hypertension after 20 weeks of gestation associated with proteinuria >0.3 gm/24 hours .
- It’s a disease of the placenta , affecting 6-8% of all pregnancies.
- It’s the second cause of maternal death in the USA.
- It may be mild , moderate or severe.

- **Eclampsia** is diagnosed when neurological symptoms of convulsions or coma occurs in the setting of preeclampsia that may lead to death.

Severe preeclampsia should have one of the following

- CNS symptoms as blurred vision
- Nausea , vomiting
- Systolic BP above 160 mmHg ,Diastolic BP above 110 mmHg
- Oliguria less than 500 cc/day
- Severe fetal growth restriction.
- Pulmonary oedema

Complications of Preeclampsia

- **Fetal**
- Intrauterine growth retardation
- Intrauterine fetal death
- Premature Labour
- **Maternal**
- Cerebral hemorhage
- Renal Failure
- Acute pulmonary odema
- Disseminated Intravascular coagulopathy (DIC)

4.Pre-existing HTN with superimposed gestational HTN with proteinuria

- Affects 10-25% of patients with chronic hypertension.
- Preexisting hypertension with the following signs:
- New onset proteinuria before 20 weeks of gestation.

Which ladies are most likely to have preeclampsia?

- 1.Very young (teenage)and old pregnant ladies (Above 40 Y)
- 2.Being pregnant for the first time.
- 3. Past history of previous preeclampsia.
- 4. Pre existing hypertension.
- 5. Presence of DM, Obesity , Kidney diseases, Lupus and Rheumatoid.
- 6. Ethnic groups at high risk .

Prenatal care for hypertensive mothers

- 1.ECG for all pregnant ladies with chronic hypertension.

- 2.Baseline laboratory tests:
- Urine analysis
- Renal functions
- Abdominal and pelvic ultrasound

- 3.Special care for ladies with previous history of preeclapmsia in past pregnancies

Management of HTN during pregnancy

- **For mild cases**
- Most ladies who have preexisting mild HTN (140-159 mmHg systolic pressure and 90 -99 mmHg diastolic pressure) will not have cardiovascular complications .
- Some ladies will withdraw their medications as their blood pressure will drop due to vasodilatation .

- **For moderate to severe cases:**
- **Non pharmacological**
- Non pharmacological treatment options like diet control and life style interventions have limited role .
- **Pharmacological treatment options**
- ACEI ,ARBS,Direct renin antagonists are strictly **CONTRAINDICATED**
- **Oral Methyl dopa ,CCB (Nifedipine)and B blockers(Labetalol) ,Hydralazine**

Drugs for HTN during pregnancy

- Methyldopa
- Reduces central sympathetic drive
- Dose 250 -500 mg /6 hours maximum dose 4 gm /day
- Hydralazine Apresoline
- Has a vasodilating action , increases uteroplacental blood flow.
- Oral dose 25-75 mg /6 hours
- IV in hypertensive emmergncy 20 mg IV slowly then 5 mg /20 min until Diastolic pressure drops to 100 mmHg

- Labetalol
- Is an alpha blocker and non selective beta blocker
- IV 20 mg repeated every 10 minutes up to 300 mg/day
- Has rapid onset of action
- Contraindicated in severe bronchial asthma
- Nifedipine
- Calcium channel blocker , can be given orally 10 -20 mg twice daily

Management of acute severe Hypertension during pregnancy

- The first line of treatment is IV labetalol and Hydralazine or oral Nifedipine.
- IV Labetalol should be avoided in patients with severe asthma ,congestive heart failure.

Management of preeclampsia

- **Prevention in case of high risk cases**
- Weight reduction .
- Aspirin 100-150 mg daily dose from week 12 till week 36
- **Treatment of severe cases**
- The only way of treatment is **termination of pregnancy** , mild to moderate cases may be closely followed up until fetal development near full term.
- In case of complications before full term pregnancy should be terminated
- Magnesium sulphate in cases of Eclampsia associated siezures

During labor

- Delivery may be normal or Cesarean in case of fetal distress or failure of normal labor induction
- Close monitoring of the fetal heart during labour
- Proper analgesia of the mother
- Close monitoring of BP

Post partum care

- Close monitoring of the blood pressure for 48 hour after labour
- Avoiding Ergometrine as it may increase BP
- Follow up of mothers at risk for preeclampsia in the future pregnancies.