PREECLAMPSIA & LOW DOSE ASPIRIN

HK SATPATHY
MFM
Methodist Women's Hospital
Omaha, NE
1. Gestational HTN
2. Preeclampsia and eclampsia
   - Preeclampsia
     - without severe features
     - with severe features
3. Chronic HTN
4. Chronic HTN with superimposed preeclampsia

CLASSIFICATION OF HYPERTENSIVE DISEASES OF PREGNANCY

**Box 5:** Severe Features of Preeclampsia (any of these findings)

- Systolic blood pressure of 160 mm Hg or higher, or diastolic blood pressure of 110 mm Hg or higher on two occasions at least 4 hours apart while the patient is at bed rest, unless antihypertensive therapy is initiated before this
- Thrombocytopenia (platelet count less than 100,000/microliter)
- Impaired liver function as indicated by abnormalitied elevated blood concentrations of liver enzymes (by twice normal concentration), severe persistent right upper quadrant or epigastric pain unresponsive to medication and not accounted for by alternative diagnoses, or both
- Progressive renal insufficiency (serum creatinine concentration greater than 1.1 mg/dL or a doubling of the serum creatinine concentration in the absence of other renal disease)
- Pulmonary edema
- New-onset cerebral or visual disturbances

**Table 1:** Maternal Complications in Preeclampsia

<table>
<thead>
<tr>
<th>Acute</th>
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</thead>
<tbody>
<tr>
<td>Stroke</td>
<td>Abdominal attack</td>
<td>Disseminated intravascular coagulation</td>
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<tr>
<td>HELLP syndrome</td>
<td>Liver hemmor/age/rupture</td>
<td>Adult respiratory distress syndrome</td>
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<tr>
<td></td>
<td>Acute renal failure</td>
<td>Death</td>
</tr>
<tr>
<td>Long-term</td>
<td>Chronic hypertension</td>
<td>Diabetes mellitus</td>
</tr>
<tr>
<td></td>
<td>Chronic renal failure</td>
<td>Coronary artery disease</td>
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<tr>
<td></td>
<td>Neurologic deficit</td>
<td>Premature death</td>
</tr>
</tbody>
</table>

HELLP, hemolysis, elevated liver enzymes, low platelets.
SCREENING FOR PREECLAMPSIA AND ECLAMPSIA

TASK FORCE RECOMMENDATION

- Screening to predict preeclampsia beyond obtaining an appropriate medical history to evaluate for risk factors is not recommended.

  Quality of evidence: Moderate
  Strength of recommendation: Strong

Box 1: Interventions that are recommended for prevention or treatment of pre-eclampsia and eclampsia

<table>
<thead>
<tr>
<th>Recommendation</th>
<th>Quality of evidence</th>
<th>Strength of recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>In areas where delivery capture rates are low, concern over minimal additional cost to maternal and neonatal outcomes is reasonable for the prevention of pre-eclampsia in all women, but especially those at high risk of developing pre-eclampsia.</td>
<td>Moderate</td>
<td>Strong</td>
</tr>
<tr>
<td>Low-dose aspirin (75 mg) is recommended for the prevention of pre-eclampsia in women at high risk of developing the condition.</td>
<td>Moderate</td>
<td>Strong</td>
</tr>
<tr>
<td>Low-dose aspirin (75 mg) for the prevention of pre-eclampsia and its related complications should be initiated before 20 weeks of pregnancy.</td>
<td>Low</td>
<td>Weak</td>
</tr>
</tbody>
</table>

List of quality statements

- Statement 1: Women at stabilization potential with this mid-trimester care given information about how to prevent or reduce pre-eclampsia.
- Statement 2: Women with hypertension in pregnancy have a blood pressure target set at below 135/90 mmHg or lower.
- Statement 3: Pregnant women treated hypertensive with antihypertensive medication should be assessed for a full assessment, carried out by a healthcare professional, and an initial follow-up appointment is arranged.
- Statement 4: Women with preeclampsia have an increased risk of adverse outcomes for the fetus and for the newborn.
- Statement 5: Women with high blood pressure in pregnancy, in the absence of major comorbidities, may achieve adequate control of their blood pressure with lifestyle modifications alone. Women with severe hypertension should be referred for further assessment and treatment.
- Statement 6: Women with severe hypertension in pregnancy should be referred to a specialist clinic for further management of their blood pressure and lifestyle changes.
Prevention of PIH
Insufficient evidence
IUGR
IUFD
PTD
No evidence
SAB

Recommendations
The American College of Obstetricians and Gynecologists (ACOG) and the Society for Maternal-Fetal Medicine make the following recommendations:

- Low-dose aspirin (81 mg/day) prophylaxis is recommended in women at high risk of preeclampsia and should be initiated between 12 weeks and 22 weeks of gestation (typically before 16 weeks and continued daily until delivery).

- Low-dose aspirin prophylaxis should be considered for women with more than one of the following risk factors for preeclampsia:
  - Low-dose aspirin prophylaxis is not recommended solely for the indication of prior unexplained stillbirth, in the absence of risk factors for preeclampsia.
  - Low-dose aspirin prophylaxis is not recommended for prevention of fetal growth restriction, in the absence of risk factors for preeclampsia.
  - Low-dose aspirin prophylaxis is not recommended for the prevention of spontaneous placental abruption.
  - Low-dose aspirin prophylaxis is not recommended for the prevention of early pregnancy loss.

Table 1: Clinical Risk Assessment for Preeclampsia

<table>
<thead>
<tr>
<th>Risk Level</th>
<th>Risk Factors</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>• History of preeclampsia, especially when accompanied by an adverse outcome • Maternal obesity • Chronic hypertension • Systolic blood pressure ≥140 mm Hg • Renal disease • Diabetes or history of diabetes, gestational or type 1 or 2</td>
<td>Recommended low-dose aspirin (81 mg/day) in women with more than one of these clinical features.</td>
</tr>
<tr>
<td>Moderate</td>
<td>• History of preeclampsia, especially when accompanied by an adverse outcome • Maternal obesity • Chronic hypertension • Systolic blood pressure ≥140 mm Hg • Renal disease • Diabetes or history of diabetes, gestational or type 1 or 2</td>
<td>Consider low-dose aspirin if the obstetrician has more than one of these clinical features.</td>
</tr>
</tbody>
</table>
| Low         | • Previous unexplained fetal death • Do not recommend low-dose aspirin | Recommendation

Indications for aspirin

Observations Update of the 2013 U.S. Preventive Services Task Force (USPSTF) recommendations for non-pregnancy prophylaxis in pregnancy (USPSTF): The evidence on the effectiveness of low-dose aspirin in preventing preterm delivery is consistent with a beneficial effect on both short-term and long-term outcomes. The evidence on the effectiveness of low-dose aspirin in preventing preeclampsia is consistent with a beneficial effect on short-term outcomes, but inconsistent with long-term outcomes. The evidence on the effectiveness of low-dose aspirin for IUGR, IUFD, PTD, and SAB is inconsistent.
Contraindications

- Absolute
  - Allergy or hypersensitive to salicylates
  - Allergy to NSAIDs
  - Nasal polyps
  - NSAIDs induced bronchospasm

- Relative
  - GI bleeding
  - GU bleeding
  - Active PUD
  - Severe hepatic dysfunction

Pathophysicsology

The precise mechanism by which low-dose aspirin prevents preeclampsia in some women is uncertain.

Timing of aspirin use

- Initiate between 12-28 weeks, preferably prior to 16 weeks.
- May continue up to 36 weeks or delivery.

Maternal side effects

- No increased risk for
  - Abruption
  - PPH

Fetal side effects

- No increased risk for
  - Congenital anomalies
  - Premature ductal closure
  - Intracranial bleed or other neonatal bleeding

THANKS