PREECLAMPSIA & LOW DOSE ASPIRIN

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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

TABLE E-1. Diagnostic Criteria for Preeclampsia

Blood pressure	• Greater than or equal to 140 mm Hg systolic or greater than or equal to 90 mm Hg diastolic on two occasions at least 4 hours apart after 20 weeks of gestation in a woman with a previously normal blood pressure • Greater than or equal to 160 mm Hg systolic or greater than or equal to 110 mm Hg diastolic, hypertension can be confirmed within a short interval (minutes) to facilitate timely antihypertensive therapy
and	
Proteinuria	• Greater than or equal to 300 mg per 24-hour urine collection (or this amount extrapolated from a timed collection) or • Protein/creatinine ratio greater than or equal to 0.3* • Dipstick reading of 1+ (used only if other quantitative methods not available)
Or in the absence of proteinuria, new-onset hypertension with the new onset of any of the following:	
Thrombocytopenia	• Platelet count less than 100,000/microliter
Renal insufficiency	• Serum creatinine concentrations greater than 1.1 mg/dL or a doubling of the serum creatinine concentration in the absence of other renal disease
Impaired liver function	• Elevated blood concentrations of liver transaminases to twice normal concentration
Pulmonary edema	
Cerebral or visual symptoms	

* Each measured as mg/dL.

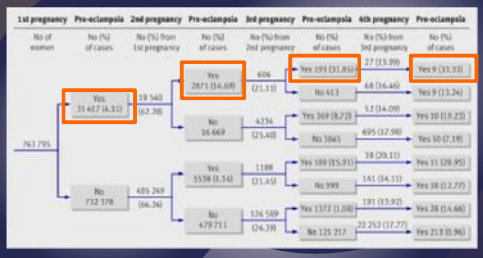
BOX E-1. Severe Features of Preeclampsia (Any of these findings)

- 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 on bed rest (unless antihypertensive therapy is initiated before this time)
- Thrombocytopenia (platelet count less than 100,000/microliter)
- Impaired liver function as indicated by abnormally elevated blood concentrations of liver enzymes (to 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

Acute
Eclampsia
Stroke
Abruptio placentae/disseminated intravascular coagulation
HELLP syndrome
Liver hemorrhage/rupture
Pulmonary edema/aspiration
Adult respiratory distress syndrome
Acute renal failure
Death
Long-term
Chronic hypertension
Diabetes mellitus
Chronic renal failure
Coronary artery disease
Neurologic deficit
Premature death

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

WHO recommendations for

Prevention and treatment of pre-eclampsia and eclampsia

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

Recommendation	Quality of evidence	Strength of recommendation
In areas where dietary calcium intake is low, calcium supplementation during pregnancy (at doses of 1.5–2.0 g elemental calcium/day) is recommended for the prevention of pre-eclampsia in all women, but especially those at high risk of developing pre-eclampsia.	Moderate	Strong
Low-dose acetylsalicylic acid (aspirin, 75 mg) is recommended for the prevention of pre-eclampsia in women at high risk of developing the condition.	Moderate	Strong
Low-dose acetylsalicylic acid (aspirin, 75 mg) for the prevention of pre-eclampsia and its related complications should be initiated before 20 weeks of pregnancy.	Low	Weak

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Hypertension in pregnancy

Quality standard [QS35] Published date: July 2013

List of quality statements

Statement 1. Women of childbearing potential with treated hypertension are given information annually about safe antihypertensive treatment during pregnancy.

Statement 2. Pregnant women at increased risk of pre-eclampsia at the booking appointment are offered a prescription of 75 mg of aspirin to take daily from 12 weeks until birth.

Statement 3. Women with hypertension in pregnancy have a blood pressure target set below 150/100 mmHg or, if they also have target organ damage, below 140/90 mmHg.

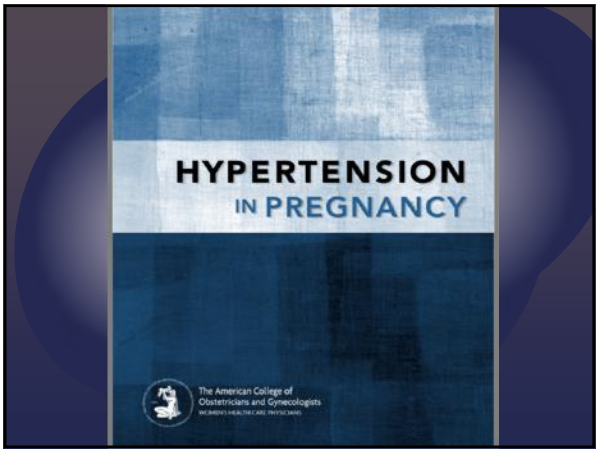
Statement 4. Pregnant women with severe hypertension are admitted for a full assessment, carried out by a healthcare professional trained in managing hypertension in pregnancy.

Statement 5. Women with a diagnosis of pre-eclampsia are admitted to hospital and monitored daily.

Statement 6. Women with pre-eclampsia have an agreed consultant obstetrician-led plan for the timing and mode of birth.

Statement 7. Women who have had hypertension in pregnancy have a plan for ongoing antihypertensive management included in their postnatal care plan, which is communicated to their GP when they are transferred to community care after the birth.

Statement 8. Women who have had gestational hypertension or pre-eclampsia discuss future pregnancy and lifetime cardiovascular risks during a medical review at their 6–8 week postnatal medical check.



In November 2013, ACOG issued the *Hypertension in Pregnancy Task Force Report* recommending daily low-dose aspirin beginning in the late first trimester for women with a history of early-onset preeclampsia and preterm delivery at less than 34 0/7 weeks of gestation, or for women with more than one prior pregnancy complicated by preeclampsia

Annals of Internal Medicine | CLINICAL GUIDELINE

Low-Dose Aspirin Use for the Prevention of Morbidity and Mortality From Preeclampsia: U.S. Preventive Services Task Force Recommendation Statement

Michael L. LeFevre, MD, MSPH, on behalf of the U.S. Preventive Services Task Force*

Description: Update of the 1996 U.S. Preventive Services Task Force (USPSTF) recommendation on aspirin prophylaxis in pregnancy.

Methods: The USPSTF reviewed the evidence on the effectiveness of low-dose aspirin in preventing preeclampsia in women at increased risk and in decreasing adverse maternal and perinatal health outcomes, and assessed the maternal and fetal harms of low-dose aspirin during pregnancy.

Population: This recommendation applies to asymptomatic pregnant women who are at increased risk for preeclampsia and who have no prior adverse effects with or contraindications to low-dose aspirin.

Recommendation: The USPSTF recommends the use of low-dose aspirin (81 mg/d) as preventive medication after 12 weeks of gestation in women who are at high risk for preeclampsia. (B recommendation)

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For author affiliation, see end of text.
* For a list of USPSTF members, see the **Appendix** (available at www.annals.org).
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The American College of Obstetricians and Gynecologists
WOMEN'S HEALTH CARE PHYSICIANS

Society for Maternal-Fetal Medicine
High-risk pregnancy experts

ACOG COMMITTEE OPINION

Number 743

Committee on Obstetric Practice
Society for Maternal–Fetal Medicine

This Committee Opinion was developed by the Committee on Obstetric Practice in collaboration with committee member T. Flint Porter, MD, and the Society for Maternal-Fetal Medicine in collaboration with members Cynthia Gyamfi-Bannerman, MD, MS, and Tracy Manuck, MD.

Low-Dose Aspirin Use During Pregnancy

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 28 weeks of gestation (optimally before 16 weeks) and continued daily until delivery.
- Low-dose aspirin prophylaxis should be considered for women with more than one of several moderate 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 preterm birth, in the absence of risk factors for preeclampsia.
- Low-dose aspirin prophylaxis is not recommended for the prevention of early pregnancy loss.

Table 1. Clinical Risk Assessment for Preeclampsia*

Risk Level	Risk Factors	Recommendation
High[†]	• History of preeclampsia, especially when accompanied by an adverse outcome • Multifetal gestation • Chronic hypertension • Type 1 or 2 diabetes • Renal disease • Autoimmune disease (systemic lupus erythematosus, antiphospholipid syndrome)	Recommend low-dose aspirin if the patient has one or more of these high-risk factors.
Moderate[‡]	• Nulliparity • Obesity (body mass index greater than 30) • Family history of preeclampsia (mother or sister) • Sociodemographic characteristics (African American race, low socioeconomic status) • Age 35 years or older • Personal history factors (eg, low birthweight or small for gestational age, previous adverse pregnancy outcome, more than 10-year pregnancy interval)	Consider low-dose aspirin if the patient has more than one of these moderate-risk factors[§]
Low	• Previous uncomplicated full-term delivery	Do not recommend low-dose aspirin

- Prevention of PIH
- Insufficient evidence
  - IUGR
  - IUFD
  - PTD
- No evidence
  - SAB

Indications for aspirin

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

Pathophysiology

- 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