

Preeclampsia

Preeclampsia is a unique syndrome, which occurs only during pregnancy. It usually occurs after 20 weeks gestation and goes away after the birth of the baby and the placenta. It is defined by gestational hypertension with proteinuria. Symptoms also include generalized edema. Preeclampsia develops in women who are normally non-hypertensive. Preeclampsia ranges from mild to severe, and eclampsia, in extremely severe cases. Eclampsia is an emergency situation.

It occurs more often in first pregnancies and women younger than 19 and older than 40 are at a higher risk. Risk factors include: nulliparity, family history of preeclampsia, multiple gestation, obesity, previous preeclampsia pregnancy and chronic medical disorders. Prevention measures include: High-protein and low salt diet, protein supplement, Ca, Mg, Zinc, fish oil, evening primrose oil, antihypertensive drugs, including diuretics, antithrombotics, low-dose aspirin, dipyridamole, heparin, and vitamins E & C. The actual cause of preeclampsia is unknown. Normally, the trophoblast cells of the placenta alter the spiral arteries in the uterus to facilitate increased blood flow. In the case of preeclampsia, the vessels are abnormally thick walled and muscular and have a higher resistance. Tissue perfusion in the placenta is decreased, resulting in hypoxia. These changes occur before symptoms of preeclampsia are evident.

Mild Preeclampsia is marked by a systolic BP between 140 and 160 mmHg, a diastolic BP between 90 and 110 mm Hg in two separate readings at least 4 hours apart and proteinuria between 0.3 and 2 g. Severe preeclampsia is determined by a systolic BP greater than 160 mm Hg (two readings 6 hours apart, on bed rest), a diastolic BP greater than 110 mm Hg and proteinuria greater than 5g. Eclampsia is seizure activity, induced by extremely severe preeclampsia and is an emergency.

INTERVENTIONS FOR PREECLAMPSIA

MILD

- Bed rest in the lateral position
- Monitor BP and weight
- Monitor neurological status (could indicate cerebral hypoxia/seizure)
- Monitor deep tendon reflexes and presence of clonus (hyperreflexia indicates increased CNS irritability)
- Provide sufficient fluids
- Monitor I's and O's
- Increase protein and carbohydrate intake, with no added salt
- Administer meds as prescribed to reduce BP
- Monitor for HELLP syndrome, a lab to diagnose severe preeclampsia, hemolysis, elevated liver enzymes, and low platelet count

SEVERE

- Maintain bed rest
- Administer magnesium sulfate to prevent seizures; may be cont. for 24-48 postpartum
- Monitor for s/s magnesium toxicity (flushing, sweating, hypotension, depressed deep tendon reflexes, and CNS depression incl. respiratory depression; keep calcium gluconate at bedside for antidote)
- Administer antihypertensives as prescribed
- Prepare for induction of labor

ECLAMPSIA

- Keep airway patent; turn head to one side, place pillow under shoulder or back, if possible
- Call for assistance
- Put side rails up
- Observe and record seizure activity

TABLE 25-2 Mild Versus Severe Preeclampsia

Parameter Evaluated	Mild	Severe
Systolic blood pressure	≥140 but <160 mm Hg	≥160 mm Hg (two readings, 6 hr apart, while on bed rest)
Diastolic blood pressure	≥90 but <110 mm Hg	≥110 mm Hg
Proteinuria (24-hr specimen is preferred to eliminate hour-to-hour variations)	≥0.3 but <2 g in 24-hr specimen (1+ on random dipstick)	≥5 g in 24-hr specimen (≥3+ on random dipstick sample)
Creatinine, serum (renal function)	Normal	Elevated (>1.2 mg/dL)
Platelets	Normal	Decreased (<100,000 cells/mm ³)
Liver enzymes (alanine aminotransferase or aspartate aminotransferase)	Normal or minimal increase in levels	Elevated levels
Urine output	Normal	Oliguria common, often <500 mL/day
Severe, unrelenting headache not attributable to other cause; mental confusion (cerebral edema)	Absent	Often present
Persistent right upper quadrant or epigastric pain or pain penetrating to back (distention of liver capsule); nausea and vomiting	Absent	May be present and often precedes seizure
Visual disturbances (spots or "sparkles"; temporary blindness; photophobia)	Absent to minimal	Common
Pulmonary edema; heart failure; cyanosis	Absent	May be present
Fetal growth restriction	Normal growth	Growth restriction; reduced amniotic fluid volume

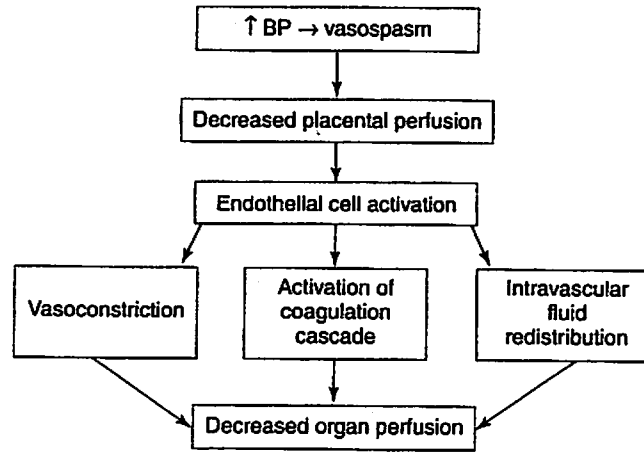


Fig. 14-1 Etiology of preeclampsia. BP, Blood pressure.

- Nulliparity
- Family history of preeclampsia
- Obesity
- Multifetal gestation
- Preeclampsia in previous pregnancy
- Poor outcome in previous pregnancy
 - Intrauterine growth restriction, abruptio placentae, fetal death
- Preexisting medical or genetic conditions
 - Chronic hypertension
 - Renal disease
 - Type 1 diabetes mellitus
 - Thrombophilias
 - Antiphospholipid antibody syndrome
 - Proteins C and S, antithrombin deficiency
 - Factor V Leiden

From Sibai BM: Hypertension. In Gabbe SF, Niebyl JR, Simpson JL: *Obstetrics: normal and problem pregnancies*, ed 5, Philadelphia, 2007, Churchill Livingstone.

- High-protein and low-salt diet
- Nutrition supplementation (protein)
- Calcium
- Magnesium
- Zinc
- Fish and evening primrose oil
- Antihypertensive drugs, including diuretics
- Antithrombotic agents
- Low-dose aspirin
- Dipyridamole
- Heparin
- Vitamins E and C

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EMERGENCY

Eclampsia

Tonic-Clonic Convulsion Signs

Stage of invasion—2 to 3 seconds: eyes are fixed; twitching of facial muscles occurs

Stage of contraction—15 to 20 seconds: eyes protrude and are bloodshot; all body muscles are in tonic contraction

Stage of convulsion—Muscles relax and contract alternately (clonic); respirations are halted and then begin again with long, deep, stertorous inhalation; coma ensues

Intervention

Keep airway patent: turn head to one side, place pillow under one shoulder or back if possible.

Call for assistance.

Protect with side rails up.

Observe and record convulsion activity.

After Convulsion or Seizure

Do not leave unattended until fully alert.

Observe for postconvulsion coma, incontinence.

Use suction as needed.

Administer oxygen via face mask at 10 L/min.

Start intravenous fluids and monitor intake.

Give magnesium sulfate or anticonvulsant drug as ordered.

Insert indwelling urinary catheter and monitor output.

Monitor blood pressure.

Monitor fetal and uterine status.

Expedite laboratory work as ordered to monitor kidney function, liver function, coagulation system, and drug levels.

Provide hygiene and a quiet environment.

Support and keep woman and family informed.

Be prepared to assist with birth when woman is in stable condition.

P

Student name Sherri Hoyt

Presentation Date 10/9/13

Teaching Topic Preeclampsia

Objectives:

- 1) Students will be able to define and understand the etiology of Preeclampsia at the end of my presentation.
- 2) Students will be able to recognize risk factors, prevention methods and interventions for Preeclampsia at the end of

Content Outline: My presentation.

- Preeclampsia - mild /severe
 - Definition
 - etiology
 - Risk factors
 - Prevention methods
 - Interventions
- Eclampsia - Emergency
 - Interventions

Criteria	Satisfactory	Unsatisfactory	Comments
Topic was relevant to third semester content	✓		<i>Good review, handsout helpful, good presentation</i>
Identified 2 objectives	✓		
Objectives were clear	✓		
Objectives were measurable	✓		
Method to measure objectives	✓		

References in APA format

**Student Peer Teaching Assignment
Peer Comments**

Presenting student name Sherri Hoyt

Presentation Date 10/9/13

Teaching Topic Pre-Eclampsia

Objectives:

1)Students will be able to define and understand the etiology of preeclampsia at the end of my presentation.

2)Students will be able to recognize risk factors, prevention methods and interventions for preeclampsia at the end of my presentation

N= 7

Criteria	Satisfactory	Unsatisfactory	Comments
Topic was relevant to third semester content	7	0	-Preeclampsia will be in our studies next week -Fabulous presentation ,I really understood it better.
Objectives were clear & measurable	7	0	-Interventions for mild, moderate, severe eclampsia were well defined
What did you like best about this presentation?			Very Well done
If I could have changed one thing in this presentation it would be....			-Visual aids would have been nice -Add what was going on with the baby -Nothing
How could the presentation be improved (not the content but the presentation style)			-It could have been a little more energetic -Maybe a diagram of the different blood pressures -Include risks to the fetus