MOUNT SAINT MARY'S UNIVERSITY

PREECLAMPSIA

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Gestational Hypertension

New-onset hypertension after 20 weeks gestation in a previously normotensive woman without proteinuria or signs of end-organ damage.
Blood Pressure Criteria: ≥140/90 mmHg, measured at least twice 4 hours apart.
Key Feature: Appears after 20 weeks, no protein in urine, and no severe features.

Chronic hypertension

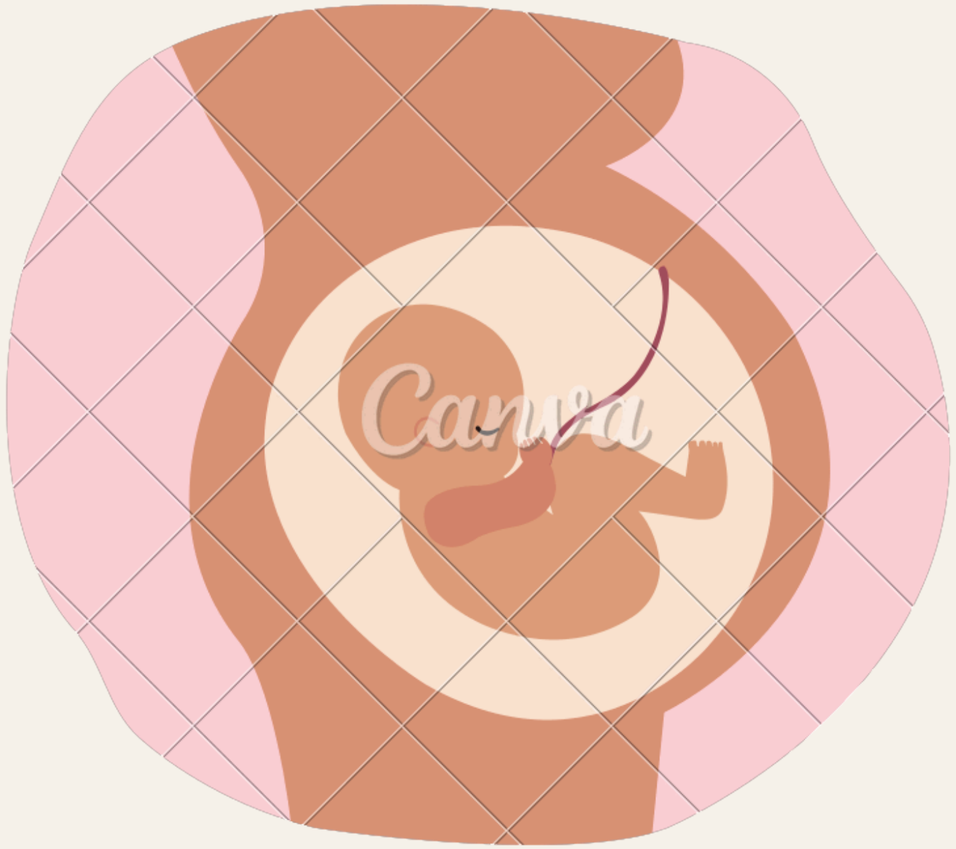
Hypertension that is present before pregnancy, diagnosed before 20 weeks gestation, or persists beyond 12 weeks postpartum.
Blood Pressure Criteria: ≥140/90 mmHg.
Key Feature: Pre-existing condition — the woman was hypertensive before pregnancy or early in pregnancy.

Preeclampsia

Definition:
A pregnancy-specific hypertensive disorder that occurs after 20 weeks gestation with proteinuria OR with evidence of end organ dysfunction, even without protein in urine.

Diagnostic Criteria:
BP ≥140/90 mmHg and Proteinuria (≥300 mg/24 hr, protein/creatinine ratio ≥0.3, or urine dipstick ≥1+)

DIAGNOSIS



Preeclampsia is diagnosed after 20 weeks gestation with new-onset hypertension PLUS proteinuria OR evidence of systemic/organ dysfunction.

Additional Requirements:

Proteinuria:

- ≥300 mg/24-hr urine collection OR Protein/creatinine ratio ≥0.3 OR Dipstick ≥1+ (least reliable)

Organ dysfunction (even without proteinuria):

- Thrombocytopenia (<100,000)
- Elevated liver enzymes (AST/ALT >2× normal) with RUQ or epigastric pain
- Renal insufficiency (creatinine >1.1 mg/dL or doubling baseline)
- Pulmonary edema
- New-onset visual changes or severe headache

Signs and Sx:

- Hypertension - BP > 140/90 (mild) or ≥160/110 (severe)
- Renal - proteinuria, oliguria
- Neurological - headaches, seizures - if eclampsia, visual changes, hyperreflexia
- Liver involvement - N/V, ↑ liver enzymes

epigastric pain

- Pulmonary- dyspnea, crackles
- Edema- facial, hands, sudden weight gain

Risk Factors

- Maternal hx - prior eclampsia, chronic HTN
- Medical conditions - diabetes, kidney disease, obesity, autoimmune disease
- Pregnancy-related -Multiple gestation, IVF, new partner
- Demographic - Age <20 or >35, African American, family history (mother/sister)
- Other- long interpregnancy interval (>10 years)

Labs

- CBC - platelets
- CMP - kidney/ liver function (ADT/ALT), creatinine
- LDH - indicator of hemolysis (elevated)
- Urine protein studies - confirm proteinuria
- Uric acid - may be elevated

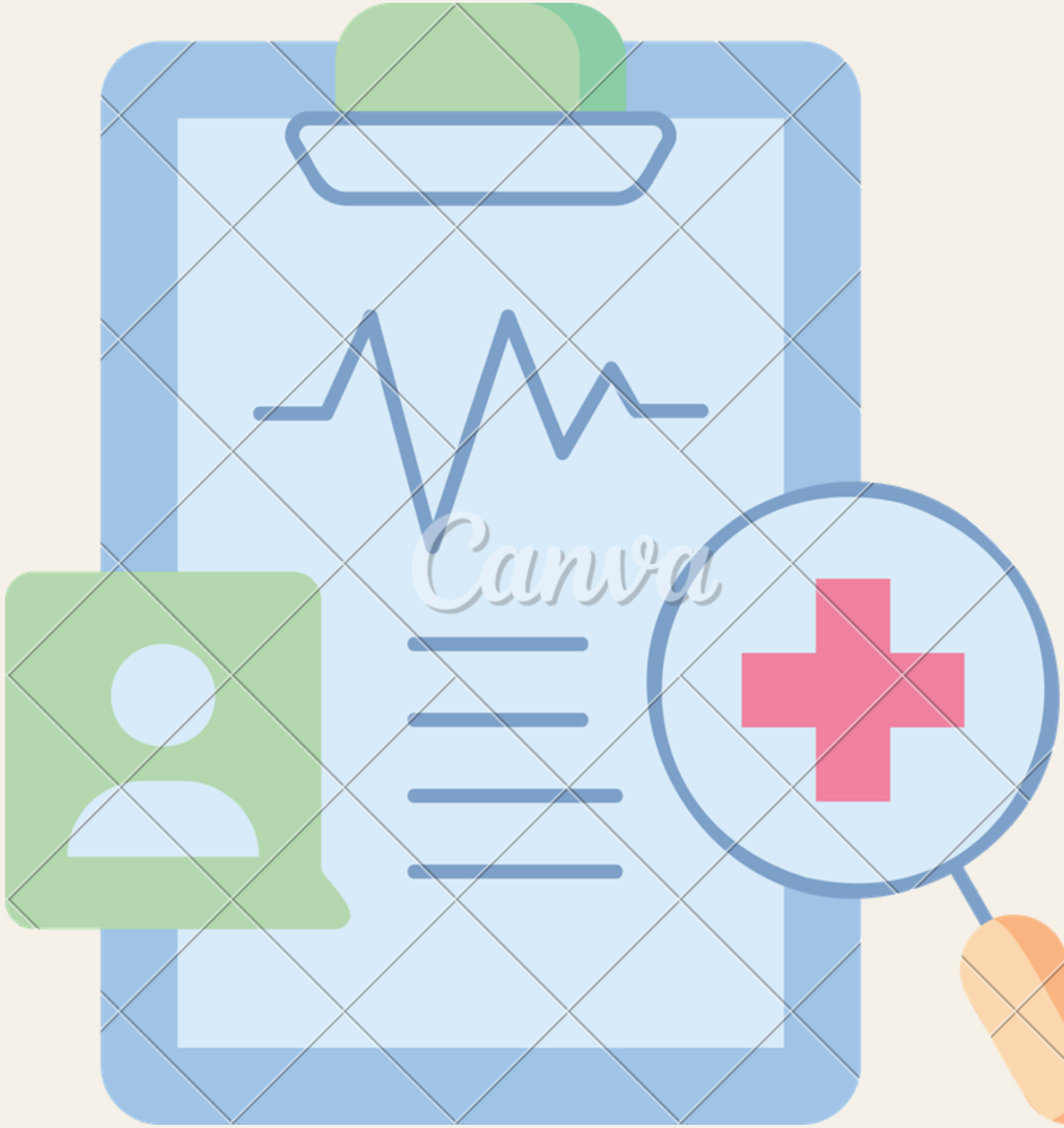
Diagnostic Testing

- 24h- hour urine collection - gold standard protein measurement
- Urine protein/creatinine ratio- faster confirmation
- Frequent BP monitoring - determine severity

Fetal Surveillance

- Nonstress test - Assess fetal well being
- biophysical profile - assess fetal status
- Ultrasound for growth and fluid - detect IUGR, oligohydramnios
- Doppler flow studies - Assess placental perfusion

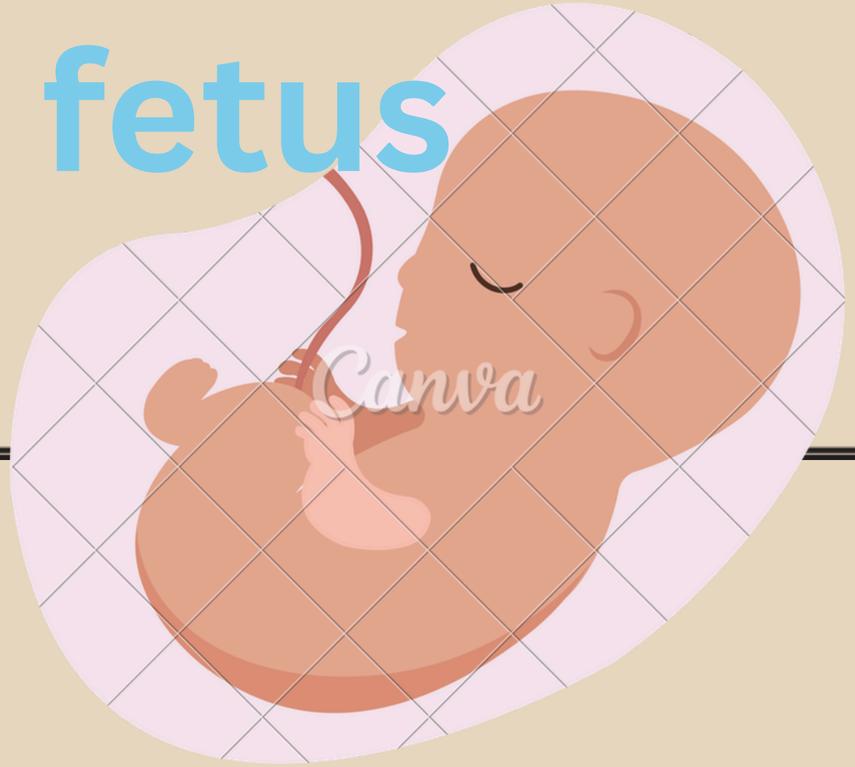
DESCRIPTION OF THE CONDITION



Pathophysiology:

- Poor placental development causes decreased placental blood flow
- Placenta releases inflammatory factors into maternal circulation and these substances damage the mother's endothelial lining (blood vessels) which causes:
  - Vasoconstriction
  - Platelet activation and clotting
  - Placental hypoperfusion

Prognosis for mother and fetus



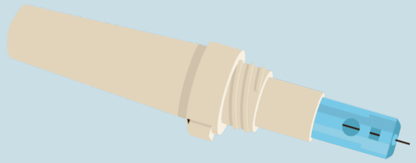
Prognosis – Mother

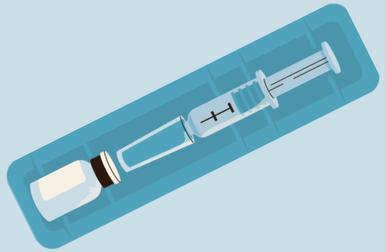
- Good with early diagnosis & management
- Can progress to severe preeclampsia, eclampsia, HELLP, stroke
- Delivery is the only cure; symptoms improve postpartum

Prognosis – Fetus

- Risk for IUGR, oligohydramnios, and placental insufficiency
- Higher chance of preterm birth if early delivery needed
- Severe cases may lead to abruption or stillbirth if untreated

Treatment





Medical interventions

- Stabilize Blood Pressure
- Prevent Seizures
- Monitor for worsening Disease
- Manage Fluid Balance
- Delivery Planning

Medications

- Labetalol - First Line Defense
- Hydralazine - for Severe HTN
- Nifedipine - if IV access unavailable
- Magnesium Sulfate (IV) for prevention of seziures

→ Loading Dose & then Maint

*Calcium Gluconate (IV) - Antidote

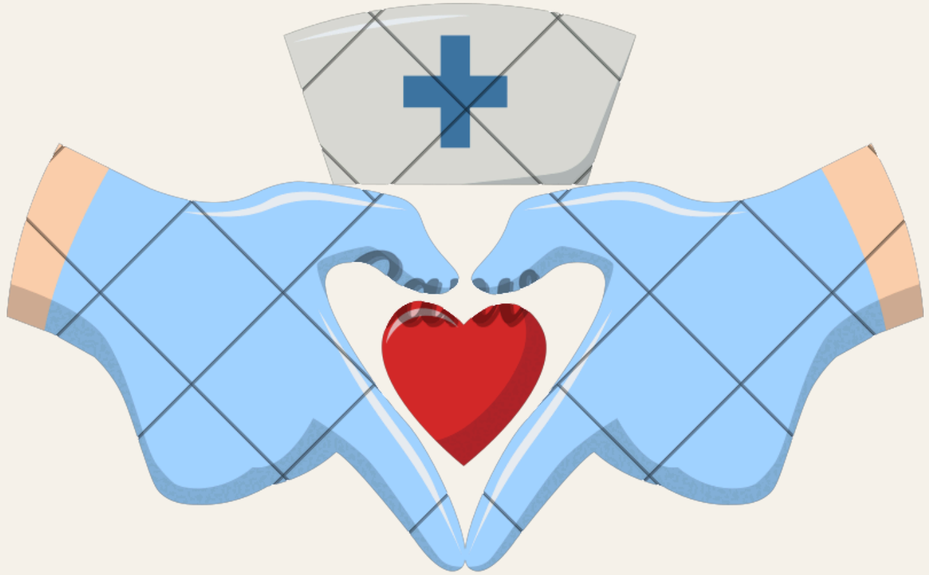
Actions

- Monitor BP frequently (q15-30 min in severe cases)
- Conitnuous fetal monitoring
- Monitor respiratory rate & assess lung sounds
- Strict I & O
- Monitor for severe headache, visual changes, epigastric pain

→ check following labs:

CBC, CMP, CREATININE, URINE PROTEIN

Nursing Interventions/Duties/Priorities



Nursing Interventions

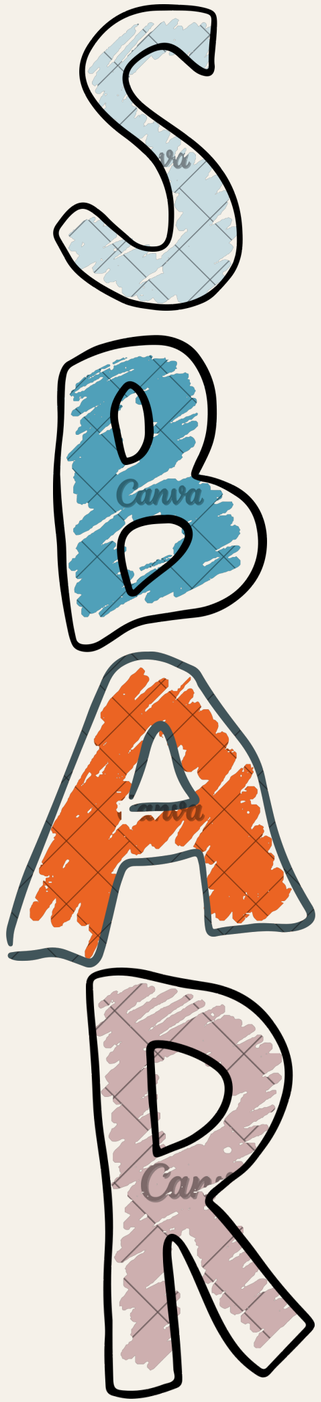
- Administer antihypertensive medications (labetalol, hydralazine, nifedipine) as ordered.
- Initiate and maintain magnesium sulfate infusion for seizure prevention.
- Monitor maternal vital signs frequently, especially BP.
- Assess deep tendon reflexes, respiratory status, and urine output during magnesium therapy.
- Perform continuous or intermittent fetal heart rate monitoring.
- Evaluate for worsening symptoms (headache, visual changes, epigastric/RUQ pain, decreased urine output).
- Maintain strict intake and output and monitor for oliguria.
- Manage IV fluids cautiously to reduce risk of pulmonary edema.
- Encourage left lateral positioning to improve placental perfusion.
- Implement seizure precautions (oxygen setup, side rails padded, suction available)

Nursing Duties

- Accurately measure and document BP using proper technique.
- Administer all prescribed medications on schedule and evaluate effectiveness.
- Maintain IV access and ensure medication/infusion safety (especially magnesium sulfate).
- Keep calcium gluconate available at bedside as antidote for magnesium toxicity.
- Review and report abnormal lab values (platelets, liver enzymes, creatinine, urine protein).
- Communicate any changes in maternal or fetal status to the provider immediately.
- Assist with preparation for induction or cesarean birth if indicated.

Nursing Priorities

- Prevent maternal seizures through magnesium sulfate management.
- Control severe hypertension to reduce risk of stroke, eclampsia, or placental abruption.
- Maintain fetal oxygenation and detect early signs of distress
- Identify progression to severe features or HELLP syndrome quickly.
- Ensure adequate renal perfusion



- This is RN Kate calling about Maria Gonzalez, a 24-year-old G1P0 at 34+2 weeks gestation.
- She is diagnosed with severe preeclampsia and her blood pressure has increased over the last hour.
- Her current BP is 168/112 mm Hg, HR 102, RR 22, and SpO_2 97% on room air.
- She is reporting a severe frontal headache (8/10), seeing floaters, and sharp epigastric pain.
- Fetal heart rate is 165 bpm, minimal variability, and two late decelerations noted in the past 10 minutes.
- She is currently receiving magnesium sulfate at 2 g/hr.

- She was admitted 6 hours ago with BP 156/108 mm Hg, proteinuria 3+ on dipstick, and complaints of headache.
- Past medical history: none significant. No chronic hypertension.
- Current medications: magnesium sulfate infusion (4 g bolus + 2 g/hr maintenance), IV labetalol 20 mg given 30 minutes ago.
- Labs from 1 hour ago, Platelets: 92,000/mm^3, AST: 84 U/L (elevated), ALT: 76 U/L (elevated), Creatinine: 1.3 mg/dL
- Urine output: 25 mL/hr for the last 3 hours
- No drug allergies.
- Fetus is cephalic on bedside ultrasound.

- The patient's BP remains in the severe range despite initial labetalol dose.
- Neurological symptoms (headache, visual changes, hyperreflexia 3+) suggest worsening disease.
- Low platelets and elevated liver enzymes indicate possible HELLP syndrome development.
- Urine output <30 mL/hr suggests renal involvement and increased risk for magnesium toxicity.
- Fetal monitoring shows signs of distress: minimal variability and late decelerations.
- Overall assessment: Declining maternal and fetal status with high risk for seizure or placental abruption.

- I need you to come assess the patient immediately.
- Request additional IV antihypertensive therapy per severe-range protocol (repeat labetalol 40 mg or hydralazine as ordered).
- Suggest evaluation for expedited delivery, possibly induction or emergent cesarean section given fetal distress and worsening maternal labs.
- Request serum magnesium level to rule out magnesium toxicity.
- I will continue monitoring BP every 5–15 minutes, maintain seizure precautions, and ensure IV access is patent.

THANK YOU!