Management of Patients with Preeclampsia

Key Words: Preeclampsia, Eclampsia, Magnesium Sulfate, PIH

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I. Purpose:

To outline collaborative management of patients with preeclampsia.

II. Policy:

Qualified personnel collaboratively manage the care of patients with preeclampsia.
III. Specific Information:

A. Initial Assessment

2. Elicit patient history.

   a. Document history of:
      i. Preeclampsia
      ii. Eclampsia
      iii. Chronic hypertension
      iv. Neurological irritability (headache, visual disturbances)
      v. Hepatic involvement (epigastric or RUQ pain, nausea, vomiting, heartburn).


   a. Assess deep tendon reflexes (DTR’s) and presence of clonus.
   b. Auscultate breath sounds bilaterally.
   c. Determine amount and location of edema.
   d. Assess level of consciousness (LOC).

B. Assessment and Care of Peripartum Patient with Preeclampsia Receiving Magnesium Sulfate Infusion

1. Procedure for Magnesium Sulfate Administration for Preeclampsia

   a. After receiving physician’s order to start infusion of magnesium sulfate, obtain from pharmacy the prepared solution of 40 grams of magnesium sulfate in 1000ml solution (yields 1 gram per 25ml)
      i. Magnesium Sulfate is piggybacked into main intravenous line and the infusion is always controlled via an infusion pump, using guardrails feature.
      ii. Loading dose: 6 gram bolus (150 ml of Magnesium Sulfate solution) over 15-30 minutes. May give 4 gram bolus per provider orders, if patient has compromised renal function.
iii. Maintenance dose: Infuse at 1-3 grams per hour via infusion pump per provider orders.

iv. If toxicity is suspected discontinue infusion, provide respiratory support if indicated and consult with provider. Consider obtaining order for magnesium level.

v. Antidote: For reversal of magnesium effect, the provider may order calcium gluconate. The usual dose is 1 gram of 10% solution to be given over five to ten minutes IV push. Monitor blood pressure, pulse, respiration, level of consciousness, and DTR’s every 5 minutes until stable.

2. Maternal Assessment

a. Vital Signs
i. Monitor and document blood pressure every 15 minutes during the administration of 6 gram Magnesium Sulfate loading dose.

ii. Monitor blood pressure, pulse, and respiration every 30 minutes while on continuous Magnesium Sulfate infusion during the intrapartum period.

iii. For patients receiving oxytocin, assess and document maternal vital signs with each titration of oxytocin (increase or decrease).

iv. Monitor blood pressure, pulse, and respiration every hour in the antepartum and postpartum periods.

v. Monitor blood pressure every 5-15 minutes during hypertensive episodes and with IV antihypertensive medication use.

vi. Assess edema once a shift.

vii. Assess temperature every four hours if membranes intact or post delivery. Monitor temperature every two hours if membranes ruptured.

b. Intake and Output
i. Measure and record hourly intake and output.

ii. Insert Foley catheter to gravity drain. Consider urometer if urine output is decreasing and/or <50 ml/hr.

iii. Patients may have clear liquid diet if ordered.
c. Respiratory

i. Auscultate breath sounds every 2 hours.
ii. Monitor oxygen saturation every hour.
iii. Monitor for signs of pulmonary edema including SaO2 <95%, tightness in chest, cough, shortness of breath, tachypnea, tachycardia, or adventitious breath sounds.

d. Neurologic

i. Assess deep tendon reflexes and presence or absence of clonus every hour during continuous Magnesium Sulfate infusion.
ii. Assess level of consciousness every hour during continuous Magnesium Sulfate infusion.
iii. Assess for headache and visual disturbance every shift and as needed.
iv. Assess for signs and symptoms of magnesium toxicity such as absent deep tendon reflexes, decreasing level of consciousness, or decreasing respiratory rate.

e. Activity

i. Strict bedrest with side rails up during Magnesium Sulfate infusion.
ii. Instruct patient to rest in a position to optimize cardiac output and prevent vena cava syndrome.

f. Gastrointestinal

i. Assess patient regarding presence of right upper quadrant pain, nausea, or vomiting every shift.

2. Fetal and Uterine Assessment

a. Initiate continuous electronic fetal monitoring.

b. Refer to [Fetal Heart Rate Monitoring](#) for frequency of assessments and documentation.

3. Transfer to postpartum unit (4 East)
C. Assessment and care of patients with preeclampsia not receiving intravenous Magnesium Sulfate.

1. Maternal Assessment

a. Vital Signs
   i. Monitor blood pressure, pulse, respiration, and temperature every four hours.
   ii. Assess for edema (location and degree of periorbital, sacral, upper and lower extremities) every shift.

b. Intake and Output
   i. Measure and record all intake and output every 4 hours. If patient has an IV or Foley catheter measure intake and output every two hours.
   ii. Instruct patient to empty bladder at least every four hours if Foley catheter is not present.
   iii. Record and document weekly maternal weight. Document scale used.

c. Respiratory
   i. Auscultate breath sounds every four hours and as needed.
   ii. Document the following:
      a. Quality of lung sounds
      b. Presence or absence of adventitious breath sounds.
      c. Shortness of breath.
      d. Tachypnea.
      e. Other respiratory assessment findings.
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d. Gastrointestinal
   i. Assess patient regarding presence of right upper quadrant pain, nausea, or vomiting every shift.

e. Neurologic
   i. Assess and document level of consciousness, presence of headache or visual disturbance every four hours and as needed.
   ii. Assess deep tendon reflexes and presence of clonus every four hours.

f. Activity
   i. Patient is to remain on bedrest with bathroom privileges, unless otherwise ordered.

2. Fetal Assessment and Uterine Activity
   a. Refer to provider order for frequency of assessment.

D. Eclamptic Seizure

1. In the event of an eclamptic seizure:
   a. Turn patient on her side if possible.
   b. Protect patient from physical harm.
   c. Call immediately for assistance in room.
   d. Notify OB Emergency Team.
   e. Administer Magnesium Sulfate bolus as ordered.
      i. Seizure dose: Administer 4-6 grams IV diluted in 100ml of IV fluid over 10-15 minutes and return to maintenance dose of 2-3 grams per hour.
      ii. If seizure activity recurs, administer additional 2 gram bolus over 3-5 minutes.
      iii. If no IV access present, administer IM Magnesium Sulfate dose of 10 grams of a 50% solution. Administer dose in divided injections of no more than 5ml maximum injection volume. Administer IM injection using only the dorsogluteal or ventrogluteal sites. Only administer IM magnesium sulfate until IV access obtained.
      iv. Other medications may be ordered by the provider. Administer those medications per orders.
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v. Continued seizure activity unresponsive to medication may necessitate patient intubation and mechanical ventilation.

f. Once seizure activity stops:
   i. Administer oxygen at 10 liters per minute by face mask. Wean oxygen per provider order and patient status.
   ii. Suction nose and mouth as necessary.
   iii. Assess blood pressure, pulse, respirations, and fetal heart rate parameters every 5 minutes until stable.

E. Nursing Implications

1. Notify provider for any of the following abnormal findings:
   a. Systolic blood pressure ≥ 160 mmHg
   b. Diastolic blood pressure ≥ 110 mmHg
   c. Respirations ≤ 14 or ≥ 26
   d. Absent deep tendon reflexes
   e. Urine output < 120ml per 4 hours or with Foley < 60ml per 2 hours
   f. Symptoms of pulmonary edema
   g. SaO2 <95% by pulse oximeter
   h. Seizure activity
   i. Suspected Magnesium Sulfate toxicity
   j. Symptoms of placental abruption
   k. Altered mental status
   l. Change in neurologic status
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m. Complaints of nausea/vomiting, epigastric pain, or heartburn
n. Nosebleed, petechiae, or ecchymoses
o. Category II or III fetal heart rate tracing
p. Imminent delivery

F. Patient and Family Education

1. Educate patient and family at the level of their understanding about the following:
   a. Plan of care
   b. Unit routine
   c. Electronic fetal monitoring
d. Signs and symptoms of preeclampsia
e. Physical activity restrictions
   f. NICU tour
g. Magnesium Sulfate side effects
   h. Special testing: BPP, ultrasound, Doppler flow studies, frequent lab work

2. Antepartum and postpartum discharge teaching includes:
   a. Monitoring of blood pressure
   b. Signs and symptoms for which the provider should be notified.
c. Timing and importance of follow-up appointments.

IV. References:


Area Specific Policy Manual: Labor and Delivery
AS 201111-20.01 Fetal Heart Rate Monitoring

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