**Preeclampsia without Severe Features (Mild): Nursing Assessment**

Table 1. Nursing Assessment Frequency

* 1. Preeclampsia Without Severe Features (Mild)

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|  | **Preeclampsia without Severe Features (mild)** |
|  | Antepartum\* | Intrapartum\* | Postpartum\* |
| BP, Pulse, Respiration, SaO2 | Every 4 hours | Every 60 min | Every 4 hours |
| Lung sounds | Every 4 hours | Every 4 hours | Every 4 hours |
| Deep Tendon Reflex EdemaAssessment for headache, visualdisturbances, epigastric pain | Every 8 hours | Every 8 hours | Every 8 hours |
| Fetal status and uterine activity | Every shift | Continuous | N/A |
| Temperature | Per facility protocol |
| Intake and output | Every 1 hour with totals every 8 and 24 hours |

\*This is the minimum frequency recommended for the patient NOT on magnesium sulfate.

**Severe Intrapartum/ Postpartum Hypertension: Fluid Management**

1. Patients with severe preeclampsia should have strict fluid intake and output monitoring assessments. A Foley catheter with urometer is useful for monitoring urine output and is essential in the setting of oliguria or pulmonary edema.
2. Total fluid intake (oral and intravenous) should be limited in both preeclampsia without severe features (mild) and severe preeclampsia. Many recommend that the sum of oral and all IV fluid should be ≤ 125 ml/hr (range 60 to ≤ 125 ml/hr) unless there are other clinical circumstances that dictate a different management plan.
3. Anesthesiologists should consider omitting or reducing the fluid bolus prior to epidural analgesia and ensure proper lateral positioning to avoid hypotension. Early treatment of hypertension has consistently been found to reduce the incidence of hypertensive crisis and will decrease the risk or prevent intracranial hemorrhage.2-4,6
4. An oliguric patient (less than 30 ml per hour for two hours, or less than 500 ml in 24 hours), should be given a limited trial of IV fluid boluses (normal saline or Lactated Ringer’s), usually starting with 250-500 ml.

**Severe Intrapartum/ Postpartum Hypertension: Nursing Assessment**

*If severe hypertension does not respond to treatment within 30-60 minutes, consultation with MFM or critical care specialist should be obtained and the woman transferred to a higher level of care (Bernstein et al. 2017).*

Monitor BP closely throughout. Once sBP AND dBP are below treatment threshold, continue to monitor BP closely (q 10 minutes for 1 hour, then q 15min for 1 hour, then q30 min for 1 hr, then q 60 min x 4 hour).

* 1. Severe Preeclampsia Nursing Assessment Frequency

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|  | **Severe Preeclampsia Intrapartum and Postpartum for****women on Magnesium Sulfate** |
| BP, Pulse, Respiration, SaO2 | * Every 5 mins during loading dose and q30 mins during maintenance of magnesium sulfate infusion
* Can change to every 60 mins if any one or more of the following criteria are met:
	+ Preeclampsia without severe features (mild)
	+ BP stable without increases for a minimum of 2 hours
	+ No antihypertensives within last 6 hours
	+ Antepartum patient
	+ Latent phase of labor
* Continuous SaO2 during magnesium infusion for intrapartum. For postpartum patient, check with vital signs
 |
| Lung sounds | Every 2 hours |
| Deep tendon reflexes & clonus, Level of consciousnessEdemaAssessment for headache, visual disturbances, epigastric pain | Every 4 hours |
| Temperature | Per facility protocol |
| Intake and output | Intake:* IV solutions and medication drips should all be on a pump
* Total hourly intake should be 60 < 125 ml/hr
* NPO with ice chips or as permitted by practitioner Output:
* Insert foley with urometer

Calculate hourly, end of shift, and 24-hour totals |
| Fetal status and uterine activity | Continuous fetal monitoring |
| Epidural- Consider  | Lateral positioning, Eliminating/ reducing fluid bolus |

1. Acute BP Treatment with IV Medication

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| **Acute BP Treatment with IV Medication: Ante, Intra and Postpartum** |
| BP, Pulse, Respiration | Every 5-15 min until stable |
| SAO2 and LOC | Every 5-15 min for a minimum of 1 hour |
| Fetal assessment and uterine activity | Continuous |

**Meds**

**Beta-blocker first-line:**

* Labetalol HCl **(include contraindications/ relative contraindications: Asthma, congestive heart failure, cocaine or methamphetamine use)** for sBP>160 OR dBP>110 for 15 or more minutes. **Repeat BP 10 minutes** after each administration and if elevated sBP>160 OR dBP>110, increase labetalol according to following dosing.
1. First dose: 20mg IVP over 2+ minutes;
2. Second dose: If sBP>160 OR dBP>110 @10 minutes post first administration, give second dose: 40mg IVP over 2+ minutes;
3. Third dose: If sBP>160 OR dBP>110 @10 minutes post second administration, give third dose: 80mg IVP over 2+ minutes;
4. Hydralazine: If sBP>160 OR dBP>110 @10 minutes post third dose of labetalol, give 10mg hydralazine IVP over 2+minutes.
5. If sBP>160 OR dBP>110 @20 minutes post hydralazine, obtain emergency consult.

Beta-blocker Protocol: labetalol

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| Condition | Dose/ Route | Instruction |
| sBP>160 OR dBP>110 for 15 minutes or more | 20mg labetalol IVP  | Give over at least 2 minutes. Repeat BP measurements 10 minutes after dose. |
| sBP>160 OR dBP>110 @10 minutes post last dose | 40mg labetalol IVP | Give over at least 2 minutes. Repeat BP measurements 10 minutes after dose. |
| sBP>160 OR dBP>110 @10 minutes post last dose | 80mg labetalol IVP | Give over at least 2 minutes. Repeat BP measurements 10 minutes after dose. |
| sBP>160 OR dBP>110 @10 minutes post last dose | [**reflex in new med**] 10mg **hydralazine** IVP | Give over at least 2 minutes. Repeat BP measurements 10 minutes after dose. |
| sBP>160 OR dBP>110 @10 minutes post last dose | Emergency consult |  |

**Vasodilator first-line:**

* Hydralazine IVP **(include contraindications/ relative contraindications: Tachycardia).** Repeat BP **20 minutes** after each administration and if elevated sBP>160 OR dBP>110, administer meds according to following dosing. Once sBP AND dBP are below treatment threshold, continue to monitor BP closely (q 10 minutes for 1 hour, then q 15min for 1 hour, then q30 min for 1 hr, then q 60 min x 4 hour).
1. First dose: Hydralazine 5mg OR 10mg IV over 2+ minutes.
2. Second dose: If sBP>160 OR dBP>110 @20 minutes post first administration, give hydralazine 10mg IV over 2+ minutes.
3. Labetalol: If sBP>160 OR dBP>110 20 minutes post second dose of hydralazine, give labetalol 20mg IVP over 2+ minutes.
4. Labetalol: If sBP>160 OR dBP>110 20 minutes post labetalol, give labetalol 40mg IVP over 2+ minutes and obtain emergency consult.

Vasodilator Protocol: hydralazine

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| Condition | Dose/ Route | Instruction |
| sBP>160 OR dBP>110 for 15 minutes or more | 5mg OR 10mg hydralazine IVP | Give over at least 2 minutes. Repeat BP measurements 20 minutes after dose. |
| sBP>160 OR dBP>110 @20 minutes post last dose | 10mg hydralazine IVP | Give over at least 2 minutes. Repeat BP measurements 20 minutes after dose. |
| sBP>160 OR dBP>110 @20 minutes post last dose | [**reflex in new med**] 20mg labetalol IVP | Give over at least 2 minutes. Repeat BP measurements 20 minutes after dose. |
| sBP>160 OR dBP>110 @20 minutes post last dose | 20mg labetalol IVP. Emergency consult. | Give over at least 2 minutes. Repeat BP measurements 20 minutes after dose. |

**Oral calcium-channel blocker first-line (Use this set if no IV access):**

* Immediate release nifedipine **(include contraindications/ relative contraindications: Tachycardia)** capsules to be given orally (not sublingually). Do not puncture capsules. Repeat BP measurements **20 minutes** after each dose.
1. First dose: If sBP>160 OR dBP>110 for 15 or more minutes, give immediate-release nifedipine capsules 10mg PO. Repeat BP measurements 20 minutes after dose.
2. Second dose: If sBP>160 OR dBP>110 20 minutes post first dose, give immediate-release nifedipine capsules 20mg PO. Repeat BP measurements 20 minutes after dose.
3. Third dose: If sBP>160 OR dBP>110 20 minutes post second dose, give immediate-release nifedipine capsules 20mg PO. Repeat BP measurements 20 minutes after dose.
4. Labetalol: If sBP>160 OR dBP>110 20 minutes post third dose, give labetalol 20mg IVP over 2+ minutes and obtain emergency consult.

Oral Calcium channel blocker or no IV access: nifedipine PO

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| Condition | Dose/ Route | Instruction |
| sBP>160 OR dBP>110 for 15 minutes or more | Give immediate-release nifedipine capsules 10mg PO | Do not puncture capsules. Do not give sublingually. Repeat BP measurements 20 minutes after dose. |
| sBP>160 OR dBP>110 @20 minutes post last dose | Give immediate-release nifedipine capsules 20mg PO. | Do not puncture capsules. Do not give sublingually. Repeat BP measurements 20 minutes after dose. |
| sBP>160 OR dBP>110 @20 minutes post last dose | Give immediate-release nifedipine capsules 20mg PO. | Do not puncture capsules. Do not give sublingually. Repeat BP measurements 20 minutes after dose. |
| sBP>160 OR dBP>110 @20 minutes post last dose | [**reflex in new med**] 20mg labetalol IVP. Emergency consult.  |  |

**Seizure prophylaxis/ control: magnesium sulfate**

* Magnesium sulfate (include contraindications/ relative contraindications? Renal failure, myasthenia gravis) indicated in gestational hypertension with severe features, preeclampsia with severe features, or eclampsia for seizure prophylaxis. It is not recommended as an antihypertensive agent, nor in women without severe features. Do not delay administration while treating hypertension.
1. Bolus of 4-6 g in 100ml IV over 20 minutes
2. Infusion of 2 g/hour IV continued throughout pregnancy and 24 hours postpartum.
3. 1 g calcium gluconate readily available as 10 ml of 10% solution. Give slow IV (2-5 ml/min) if magnesium toxicity present. Watch for rebound magnesium toxicity symptoms post calcium administration.
4. Magnesium toxicity monitoring (see attached table):
	1. Hourly urine output. Place indwelling urinary catheter if not already present, or use other means of collecting strict I & O if indicated.
	2. “**Serial**” evaluation for presence of patellar deep tendon reflexes. **(See table)**
	3. “**Close**” observation of respiratory rate. **End tidal CO2 monitoring**?
	4. Post Eclamptic Seizure and Magnesium Sulfate Toxicity

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| **Post Eclamptic Seizure and Magnesium Sulfate Toxicity for Ante, Intra and Postpartum** |
| BP, Pulse, Respiration | Every 5 min until stable |
| O2 Sat & LOC | Every 15 min for a minimum of 1 hour |
| Fetal Assessment and Uterine Activity | Continuous |

**Labs: (Review these options) (Lab- chem 12 panel?)**

1. CBC
2. AST, ALT, serum creatinine
3. Urine protein/ creatinine ratio
4. Repeat timing (radio buttons to select one):
	* None
	* Every 4 hours
	* Every 8 hours
	* Every 12 hours
	* Every 24 hours
5. If C/S, add on coag studies
6. PRN Mag level
	1. Serum magnesium level indicated if toxicity suspected (renal dysfunction/ oliguria, respiratory depression, or absent DTRs)

See attached ongoing assessments table

References- California toolkit, IHI toolkit, ACOG papers