

PHENYTOIN: INTRAVENOUS INFUSION - ICU

- PURPOSE:** To outline the nursing management of the patient receiving an intravenous infusion of phenytoin.
- SUPPORTIVE DATA:** Phenytoin is an anticonvulsant. Its major side effects include hypotension, heart block, cardiac and respiratory arrest. Phenytoin is contraindicated in all patients with previous hypersensitivity to phenytoin, preexistent hypotension/bradycardia.
- This protocol does not apply to administration of fosphenytoin.
- INITIAL ASSESSMENT:**
1. Assess the following prior to administration:
 - Baseline Level of Consciousness (LOC)
 - Blood Pressure (BP), Heart rate (HR) Respiratory Rate (RR) Electrocardiogram (ECG) rhythm
 - IV line patency
 2. Obtain ECG strip (Except Peds and NICU).
- ONGOING ASSESSMENT:**
3. Monitor ECG, HR, RR and pulse oximetry continuously during infusion.
 - Obtain ECG strip when 50% of the phenytoin has infused and upon completion (except Peds and NICU)
 - Observe for dysrhythmias and widening QRS.
 4. Document BP, HR and RR every 5 minutes during infusion.
 5. Monitor I.V. site for patency and for infiltration every 5 minutes (peripheral lines only).
- PREPARATION:**
6. Verify that the phenytoin order includes dose and route.
 7. Dilute phenytoin as follows (shall not exceed 6.67 mg/ml):
 - Less than or equal to 1000 mg is to be mixed in 150 or 250 mL of Normal Saline (NS)
 - Greater than 1000 mg is to be mixed in 250 mL of NS
 Note: Peds/NICU preparation is based on recommendations from Pediatric Dosage Handbook/Neofax
- ADMINISTRATION:**
8. Use a large vein for infusion.
 - **DO NOT** use small veins on the hand and feet (Peds - use small veins as last resort).
 9. Attach a 5 micron or smaller inline filter connector to intravenous phenytoin solution.
 10. Piggyback I.V. phenytoin into a maintenance NS solution (Peds/NICU administer as a primary infusion). **DO NOT** mix phenytoin with any other medications/solutions except NS
 11. Administer **IMMEDIATELY** after preparation.
 - **DO NOT** premix and store in refrigerator.
- SAFETY:**
12. **REDUCE INFUSION BY 50% IMMEDIATELY FOR THE FOLLOWING:**
 - SBP decrease 10-20 mmHg from baseline but remains greater than 90 mmHg
 - HR decrease 15 beats per minute from baseline but remains greater than 60 BPM
 - Patient complains of dizziness
 - Patient complains of IV site pain/discomfort
 Note: Peds/NICU based on age-related parameters
 13. **STOP THE INFUSION IMMEDIATELY FOR THE FOLLOWING:**
 - Hypotension (less than 90 mmHg or greater than 30 mmHg decrease from baseline SBP)
 - Bradycardia (HR less than 60 BPM)
 - Bradypnea or Apnea
 - Altered level of consciousness (LOC) from baseline
 - I.V. infiltration
 - **CRYSTALLIZATION/PRECIPITATION OF INFUSION**
 Note: Peds/NICU based on age-related parameters
 14. Administer at a rate **NOT TO EXCEED** 25 mg/min.
Note: Peds/NICU administration is based on recommendations from Pediatric Dosage Handbook/Neofax

- REPORTABLE CONDITIONS:**
- 15.** Monitor phenytoin level as ordered:
- Therapeutic level is 10-20 mcg/mL.
- 16.** Notify physician for:
- Altered LOC from baseline
 - Hypotension or greater than 20 mmHg change in SBP from baseline
 - Rhythm changes, e.g., dysrhythmias and widening QRS
 - Decreased RR/apnea
 - IV site infiltration
 - Crystallization or precipitation of solution
- Note: Peds/NICU based on age-related parameters
- PATIENT/ FAMILY TEACHING:**
- 17.** Instruct on the following:
- Purpose of infusion
 - Reason for frequent monitoring
 - To notify RN of any complaints
- ADDITIONAL PROTOCOLS:**
- 18.** Refer to the following as indicated:
- Arterial Line - ICU
 - Intravenous Therapy
- DOCUMENTATION:**
- 19.** Document in accordance with documentation standards.
- 20.** Mount ECG strips obtained prior to, during, and after infusion (except Peds/NICU).

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