IREDELL HEALTH SYSTEM

Intravenous Dilantin (Phenytoin) Administration	
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P&T Committee	Date: 01/2021
Summary of Revisions: None	

Purpose:
Intravenous phenytoin will be administered safely and effectively.

Background:
IV phenytoin should be given with great caution. The patient should be switched to oral phenytoin as soon as possible.

- Contraindications: sinus bradycardia, SA block, second or third degree heart block, Adams-Stokes syndrome, concurrent use of delavirdine, hypersensitivity to hydantoins, prior acute hepatotoxicity due to phenytoin.
- **IV phenytoin is a vesicant with a pH of 12. Improper administration can cause skin sloughing, severe nerve damage, ischemia, tissue necrosis, purple glove syndrome, and localized burning and irritation**.
- **IV phenytoin must be administered slowly**. Hypotension and severe cardiac arrhythmias (such as heart block, ventricular tachycardia, ventricular fibrillation) may occur with rapid administration. Adverse cardiac events have occurred at or below recommended infusion rates. Reduction in the rate or discontinuation of the infusion may be necessary.

Policy:

- Cardiac monitoring is required during and after IV administration of phenytoin. The defibrillator on the nursing unit may be used for cardiac monitoring at the provider's or nurse's discretion during the infusion.
- Normal saline is the only acceptable diluent for IV phenytoin. IV phenytoin is incompatible with ANY other medications.
- Solution must not be refrigerated.
- IV phenytoin must be totally infused within four hours of mixing, accounting for infusion time.
- An infusion pump must be used for administration.
- The preferred route of administration of IV phenytoin is through a central line. If this is not possible, the patient must have an IV site that is in date, with no signs of redness, irritation, or edema and through which no other vesicant medication has been administered.
- When administered through a central line, the line must be flushed with at least 60 mL of Normal Saline after administration to avoid build-up of crystals on the internal lumen of the catheter.
- The peripheral site should be initiated in the largest vein through a large gauge needle or IV catheter to decrease erosion of the internal lumen of the vessel.

- VERIFICATION OF POSITIVE BLOOD RETURN IS MANDATORY BEFORE INJECTING IV PHENYTOIN! If there is no blood return from the peripheral IV site consider restarting the IV or consulting the provider for an alternate route.
- A peripheral site must be monitored frequently during administration. If any signs of irritation develop or the patient complains or shows signs of pain, the infusion should be stopped immediately, and new access should be obtained. Aspirate any drug remaining in the catheter before removing.
- If extravasation occurs, stop the infusion immediately and disconnect (leave needle/cannula in place); gently aspirate extravasated solution. Do NOT flush the line. Remove needle/cannula. Elevate the extremity and apply dry heat. Closely monitor for tissue sloughing or compartment syndrome. **Contact provider immediately.**

Procedure for Intravenous Infusion –
Any phenytoin ordered as intravenous push will be automatically changed to intravenous infusion by pharmacy upon order verification.

1. Follow guidelines listed above for administration via central or peripheral site.
2. **Positive blood return is mandatory before injection of medication!!**
3. Phenytoin is diluted with normal saline only. The maximum concentration for administration is 10 mg/ml.
4. A 0.22 micron in-line filter must be used with a closed system transfer device.
5. Because of compatibility issues, avoid administration of phenytoin through Y-site.
6. **Do not exceed administration rate as follows**:
    - **20 mg/min in patients age 65 or older, or with preexisting cardiovascular conditions**
    - **50 mg/min in patients under age 65**
    - **0.5 – 3 mg/kg/min or 50 mg/min (whichever is slower) in pediatric patients**

INITIAL EFFECTIVE DATE: 09/2006
DATES REVISIONS EFFECTIVE: 10/2009, 12/2019, 02/2021
DATES REVIEWED (no changes): 11/2006, 12/2010, 01/2013, 08/2017, 01/2024

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