REGIONAL ADULT PARENTERAL DRUG MONOGRAPH

GENERIC NAME
fosphenytoin

Effective Date: June 19 2019 **Revised Date:** Nov 2024	CLASSIFICATION **Anticonvulsant**	OTHER NAMES **Cerebyx®**	PAGE 1 of 2

ADMINISTRATION POLICY:

IV Bolus – May be administered by a nurse
IV Intermittent/IO- May be administered by a nurse
IM Injection- May be administered by a nurse

RECONSTITUTION/DILUTION/ADMINISTRATION:

Available as: 50 mg/mL 2 and 10 mL vial phenytoin equivalents (PE). Store in refrigerator.

IV Intermittent/Intraosseous: (Loading or Maintenance Dose)

Dose (PE)	Dose Preferred Diluent Volumes Bag size NaCl 0.9% or D5W
90 to 500 mg	25 mL
501 to 1000 mg	50 mL
1001 to 1500 mg	100 mL

Fosphenytoin Dose (mg PE)	Duration of Administration Based on Rate Selected*			
	25 mg PE per minute	50 mg PE per minute	100 mg PE per minute	150 mg PE per minute
90-250 mg	10 minutes	5 minutes	3 minutes	2 minutes
300-500 mg	20 minutes	10 minutes	5 minutes	4 minutes
550-750 mg	30 minutes	15 minutes	8 minutes	5 minutes
800-1000 mg	40 minutes	20 minutes	10 minutes	7 minutes
1050-1250 mg	50 minutes	25 minutes	13 minutes	9 minutes
1300-1500 mg	60 minutes	30 minutes	15 minutes	10 minutes

*Rate selection:

Emergent situations: 150 mg PE per minute
Non-emergent situations: 50 to 100 mg PE per minute
Sensitive patients (elderly, pre-existing cardiovascular conditions): 25 to 50 mg PE per minute

IM Injection: Administer undiluted

Maximum Rate: 150 mg PE/minute in emergency situation only
Do not exceed 150 mg PE/minute. Slower administration reduces incidence of cardiovascular events (e.g. hypotension, arrhythmia) as well as severity of paresthesias and pruritus.
For non-emergent situations, may administer loading dose more slowly (e.g. over 30 minutes [approximately 33 mg PE/minute for 1,000 mg PE] or 50 to 100 mg PE/minute). Highly sensitive patients (e.g. elderly, patients with pre-existing cardiovascular conditions) should receive fosphenytoin more slowly (e.g. 25 to 50 mg PE/minute)

Maximum Concentration: 25 mg PE/mL

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HIGH ALERT DOUBLE CHECK

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DOSAGE:

Note: Dosage expressed in phenytoin equivalents (PE);
1.5 mg fosphenytoin sodium = 1 mg phenytoin sodium = 1 mg PE

Usual: Loading Dose: 10 to 20 mg/kg PE, usual 1000 mg = 1 g PE

Maintenance Dose: 4 to 7 mg/kg/day PE in divided doses, usual 100 mg PE every 8 hours Begin 6 to12 hours after load.
Titrate maintenance dose based on serum levels.

Maximum Single Dose: 20 mg/kg PE (or 1500 mg = 1.5 g PE)

STABILITY/COMPATIBILITY:

Stability of Final Admixture: 24 hours refrigerated or room temperature

Compatibility: D5W, NaCl 0.9%, combination dextrose-saline solutions and Ringers Lactate

PRECAUTIONS, POTENTIAL ADVERSE REACTIONS:

- **Cardiovascular:** heart block, prolonged QT interval, cardiac arrest, hypotension, arrhythmias. Minimize by not exceeding the maximum rate of administration.
- **CNS**: Fever, severe burning, itching or paresthesia. May last 3-50 minutes post infusion. Decreasing the rate of infusion or temporarily discontinuing may help.
- **Dermatologic**: pruritis, purple glove syndrome, drug reaction with eosinophilia and systemic symptoms (DRESS). Stevens-Johnson syndrome (SJS), toxic epidermal necrolysis (TENS) have been reported rarely but fatalities have occurred. Asian populations may be more susceptible to SJS and TENS.
- **Hematologic**: leukopenia, thrombocytopenia
- **Immunologic**: anaphylaxis
- **Local:** transient, mild to moderate local itching with IM administration
- **Neurologic**: ataxia, dizziness, headache, paresthesia, somnolence, sensory disorder

ADDITIONAL NOTES AND NURSING CONSIDERATIONS:

- Fosphenytoin dosage is expressed in phenytoin equivalents (PE) to prevent medication errors. Fosphenytoin should always be prescribed and dispensed in phenytoin equivalents (PE). The dose, concentration, and infusion rates for fosphenytoin are also expressed as phenytoin equivalents (PE)
  - 1.5 mg fosphenytoin sodium = 1 mg phenytoin sodium = 1 mg phenytoin sodium equivalents (PE)
  - Fosphenytoin 50 mg/mL PE = 75 mg/mL
- Monitor blood pressure, respiratory rate and pulse during infusion for high risk patients
- Monitor phenytoin levels. Plasma concentrations should not be measured until conversion to phenytoin is complete; approximately 2 hours after an IV infusion or 4 hours after an IM injection. Contact pharmacy for level interpretation if required. Reported levels must be adjusted for patients with renal failure and/or low albumin. Therapeutic range is 10-20 mg/L when corrected.
- Dosage adjustment may be required in patients with renal dysfunction, hepatic dysfunction or obesity.

ELDER ALERT: Clearance is decreased; lower doses may be required. May have lower serum albumin which may increase free fraction and pharmacologic response, including adverse events.