Phenytoin

Special note: Special care with calculating doses and administration volumes in neonates - frequently involved in medication error.

Neonatal

FORM Ampoule containing 250mg/5ml

INDICATION Control of neonatal seizures

DOSE RANGE

AGE	DOSE	FREQUENCY	ROUTE
Neonate	20mg/kg	Loading dose	IV
	2.5 - 5mg/kg	Every 12 hours	IV

*** See Neonatal seizures policy. Pharmacokinetics of maintenance doses of phenytoin in the neonate are unpredictable.** Care is required with maintenance doses as levels can rise rapidly following small increases in dose. **Maintenance phenytoin only to be used on direction of a Consultant Paediatrician. Maintenance dose commences 12 hours after loading dose**

RECONSTITUTION Already in solution

DILUTION

Phenytoin 250mg/5ml	2ml
Sodium Chloride 0.9%	Up to 20ml total

Gives a 5mg in 1ml solution. Use required volume

METHOD OF ADMINISTRATION Administer via an inline filter of 0.22-0.5microns at a maximum infusion rate 1mg/kg/minute.

Flush line with sodium chloride before administration as any glucose in the line will cause precipitation of phenytoin crystals.

COMPATIBILITY

Solution compatibility	Sodium chloride 0.9%
Solution incompatibility	All other IV fluids
IV Line compatibility	No other drugs. Precipitation risk if mixed with glucose or other drugs
IV Line incompatibility	All other drugs including TPN and Lipids

THIS LIST IS NOT EXHAUSTIVE PLEASE CONTACT PHARMACY FOR FURTHER INFORMATION ON COMPATIBILITY WITH ANY MEDICINES NOT INCLUDED

CAUTIONS, CONTRA-INDICATIONS AND SIDE EFFECTS

- See Summary of Product Characteristics and most recent edition of BNF for Children (links below)

SPECIAL MONITORING REQUIREMENTS

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Blood levels-

- Approximate time to steady state 1-2 weeks. (Highly variable)
- Therapeutic phenytoin levels in neonates:
- 15 to 20mg/Litre in immediate management of neonatal seizures

- 6 to 15mg/Litre for chronic dosing
- A trough sample, immediately prior to next dose is most reliable. However if this is not practical take sample at least 4 hours after oral dose and 1 hour after completion of IV infusion.

FURTHER INFORMATION

- Extravasation risk high
- DO NOT give by IM injection.
- The absorption of oral phenytoin in neonates is unpredictable. If a baby on oral phenytoin requires change to IV infusion, multiply oral dose by 1.1 to calculate equivalent IV dose.
- Phenytoin can affect the metabolism of many hepatically metabolised drugs due to enzyme induction. Also phenytoin blood levels may be increased or decreased by drugs which alter its absorption or metabolism. For further information contact your clinical pharmacist.
- Phenytoin is highly protein bound; 90% bound to serum albumin. In states of low serum albumin or altered protein binding (i.e. renal failure) adjust the therapeutic range or measure free drug level (therapeutic range of free drug = 1-2mg/L).
- Administration of intravenous phenytoin to patients receiving thyroid hormones may induce supraventricular tachycardia.
- Concurrent, or recent, administration of phenobarbital may affect plasma levels of both drugs.

PH 11.5 – 12.1

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LINKS BNF for Children: / Electronic Medicines Compendium

APPLICABLE POLICIES West of Scotland Neonatal Guidelines:

Consult local policy if applicable

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Administer reconstituted solutions immediately.
All vials, ampoules and infusion bags are for single use only unless otherwise stated.
Dose may vary depending on indication, age, renal function, hepatic function, and concomitant medications.
This monograph should be used in conjunction with the package insert, BNF for Children, and Summary of Product Characteristics.
For further advice contact your clinical pharmacist or pharmacy department.