

PHENYTOIN

ACTION and USES

Anticonvulsant use to manage neonatal seizures refractory to other agents.

DOSAGE

Loading dose (IV): 20mg/kg/dose.

Maintenance dose IV/oral: 2.5 mg/kg/dose, every 12 hours in the neonatal period, starting 12 hours AFTER loading dose May be increased by 0.5mg/kg/dose up to 4mg/kg

(Multiply oral dose by 1.1 to calculate an equivalent IV dose).

THERAPEUTIC DRUG MONITORING

- Frequency of samples: If fits refractory check levels 2 hours after loading dose and repeat every 5 days or as indicated clinically.
- Send samples to Combined Laboratories Royal Infirmary (Not RHSC)
- Volume of blood: At least 0.2ml in a heparinised tube (brown cap)
- Therapeutic range (trough before next dose timing not critical)
 - IV/Oral: 40-80 micromol/L

[Please **note** that the laboratories report in a different unit to that in this monograph. **40-80 micromol/L (as above) is equal to 10-20mg/l as in biochemistry handbook**]

ADMINISTRATION

Loading dose must be by SHORT INFUSION over 30 minutes.

Bolus IV maintenance dose: Over 5 minutes (i.e. slowly).

RECONSTITUTION

Phenytoin injection is available as a solution containing phenytoin sodium 50mg/ml. Reconstitute is not needed but it must be diluted further. An oral suspension is available, its contains 6mg/ml and also contains sucrose 1g/5ml.

Phenytoin 5mg/ml

Add 1ml of phenytoin sodium 50mg/ml to 9ml of sodium chloride 0.9% and shake well to mix.

Other compatible diluent

Sodium Chloride 0.45%

INCOMPATIBILITIES

Do not mix or infuse with glucose or any other drugs, phenytoin rapidly crystallises out of solution.

STORAGE

The unopened ampoules are stored at room temperature. Prepare the 5mg/ml dilution immediately before use and administer within ONE hour of dilution, discard any remainder. The oral preparation should be used within 3 months of opening.

MONITORING

Monitor serum levels, BP, heart rate, LFT, FBC and Bms. Stop if rash appears. Cardiovascular disturbances can occur, ECG monitoring during IV administration is advised. Watch out for arrhythmias. Observe IV site for vein irritation, avoid extravasation. Nystagmus, drowsiness and vomiting may be other signs of high drug levels. It can interact with many drugs such as corticosteroids, dopamine, pancurium, cimetidine, erythromycin and fluconazole and antacids. Milk can interfere with oral absorption so avoid administering at the same time. Other side effects include gingival hyperplasia, rickets, hyperglycaemia and hypoinsulinaemia.