


PYRIDOXINE HYDROCHLORIDE (Vitamin B6)

Trade Name	Oral: Apo-Pyridoxine (Apotex NZ) IV: Vitamin B6 Streuli (Streuli Pharma)
Class	Water soluble vitamin proteins carbohydrate and fat
Mechanism of Action	Pyridoxine is a precursor of pyridoxal which is involved in metabolism of protein, carbohydrate and fats Pyridoxine is an active cofactor in conversion of tryptophan to niacin and the neurotransmitter serotonin. It is also required for conversion of dopa to dopamine and in synthesis of the inhibitory neurotransmitter gamma- aminobutyric acid (GABA).
Indications	Pyridoxine dependent epilepsy NOTE: In the NICU the commonest reason for giving pyridoxine is for seizures not responding to usual anti-epileptics. However, there may be other metabolic conditions that require pyridoxine replacement and dose recommendations would be by the Metabolic Specialist
Contraindications	Hypersensitivity to pyridoxine
Supplied As	Oral: 50mg tablets IV: 100mg/2mL in glass ampoules
Dilution	Oral: Crush the tablet/part tablet with mortar and pestle and disperse the dose in 5mL water (see below) IV: No dilution required
Dosage	Oral: This is the most likely route as EEG is not always available 30mg/kg/DAY Round up the dose (we do not want to under dose) to equate to a ¼, ½, ¾ or a whole tablet and cut the tablet using a tablet cutter as best you can IV: If ventilated and have EEG monitoring then IV dosing is preferred but only in this situation as iv pyridoxine causes apnoea 100mg dose If no clinical seizure response in 10 minutes then repeat the dose. If no response to seizures or normalisation of the EEG then stop
Interval	Oral: 12 hourly IV: One off assessment or daily if IV to continue
Administration	Oral: May be given directly into the mouth or via NG or NJ tube Give dose immediately. IV: Slow bolus over 5 minutes

Compatible With	<p>Solution: No information available, dilution not usually required</p> <p>Terminal Y-site: adrenaline, amikacin, aminophylline, ascorbic acid, atropine, aztreonam, benzyl penicillin, bumetanide, buprenorphine, calcium chloride, calcium gluconate, cefotaxime, cefoxitin, ceftazidime ceftriaxone, cefuroxime, clindamycin, dexamethasone, digoxin, dobutamine, dopamine, doxycycline, ephedrine, epoetin alpha, erythromycin, famotidine, fentanyl, fluconazole, gentamicin, glycopyrrolate, heparin, insulin, labetalol, lactated Ringer's, lidocaine, magnesium sulphate, metoclopramide, midazolam, morphine, naloxone, noradrenaline, ondansetron, pentamidine, phenylephrine, piperacillin, potassium chloride, procainamide, promethazine, propranolol, quinidine, ranitidine, sodium bicarbonate, thiamine, ticarcillin, tobramycin, urokinase, vancomycin, vasopressin, verapamil.</p>
Incompatible With	Amphotericin B, cefazolin, diazoxide, diazepam, furosemide, ganciclovir, imipenem, indometacin, methylprednisolone, phenobarbital, phenytoin, sulphamethoxazole/trimethoprim
Interactions	Pyridoxine doses of 200mg can cause reduction in serum phenobarbital and phenytoin concentration by 35- 50%
Monitoring	<p>EEG monitoring to assess effect on seizure activity may be beneficial when treatment with pyridoxine is commenced.</p> <p>Risk of cardiorespiratory depression with IV pyridoxine, monitor respiratory rate, heart rate and blood pressure</p> <p>Risk of reversible peripheral neuropathy with long-term high dose use. Monitor for signs of peripheral neuropathy with long-term use.</p> <p>A serum pyridoxine level than less 20 nanomoles/L suggests deficiency.</p>
Stability	<p>Oral: Discard solutions of pyridoxine in water immediately after use. Tablets – manufacturers expiry</p> <p>IV: Single use ampoules discard any remaining solution immediately after use.</p>
Storage	<p>Oral Store tablets at room temperature protected from heat and moisture</p> <p>IV: Store injection at room temperature, protect from light</p>
Adverse Reactions	<p>Risk of reversible peripheral neuropathy, keep dose less than 300mg /day if possible</p> <p>Acidosis, nausea, headache, paraesthesia, sleepiness, seizures (with high doses) ,low serum folic acid, increased AST levels, hypersensitivity reactions.</p>
Metabolism	<p>Metabolised to 4 pyridoxic acid and other metabolites</p> <p>Excreted in urine, half life (adults) 15 – 20 days</p>

Comments	<p>Tablets can be quite difficult to dissolve so it is recommended to reduce inaccuracies in measuring an aliquot to crush the tablets as indicated and give the full 5mL volume</p> <p>Some IV formulations contain aluminium, check product insert</p> <p>Doses of pyridoxine greater than 200 mg/day have been associated with dependence and withdrawal reactions.</p> <p>Though more common with oral doses >30 mg/kg/day doses as low as 50 mg/day have been associated with causing neuropathy.</p>
References	<ol style="list-style-type: none"> 1. www.nzf.org.nz 2. BNF for Children www.bnf.org 3. www.micromedexsolutions.com 4. Neofax in www.micromedexsolutions.com 5. www.uptodate.com 6. Amenable Treatable Severe Pediatric Epilepsies. <i>Seminars in Ped Neurol.</i> 23:158-166. 7. National Formulary for Inherited Metabolic Diseases (IMDs) 2nd Edition October 2020  <p>BIMDG_Metabolic_ Formulary_Second_E</p>
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