

HEPARIN

Trade Name	Heparin Sodium Injection BP (DBL) Heparin sodium 1000 international units/mL (Wockhardt) s29
Class	Anticoagulant
Mechanism of Action	Heparin inhibits clot formation primarily by enhancing the rate at which antithrombin III neutralises thrombin and factor Xa, hence preventing conversion of fibrinogen to fibrin.
Indications	Indication 1: For heparinised saline used to flush IV luers to maintain their patency if used for intermittent injection or infusion, or blood sampling. Indication 2: Heparinisation of central venous infusions Indication 3: Heparinisation of arterial infusions Indication 4: Anticoagulation
Contraindications	Active bleeding, Haemophilia, neurological surgery Use with caution in patients with kidney or liver impairment; severe hypertension or peptic ulcer disease
Supplied As	Heparin injection BP 1000 unit/ 1mL
Dilution	0.1unit/ml Add 50unit (0.05mL of heparin1000 unit /1mL) to 500mL of sodium chloride 0.9%) 1unit/ml Add 500unit (0.5mL of heparin1000 unit /1mL) to 500mL of sodium chloride 0.9%)
Dosage	Indication 1: 0.1unit /mL heparinised saline for IV luers If IV drugs are given less frequently than 6 hourly: Flush every 4 – 6 hours with 0.5mL of solution. If IV drugs are given 6 hourly or more frequently: Flush before and after drug administration with 0.5mL (wt >1500g) or 0.25mL (wt ≤1500g). Indication 2: 0.1 unit/mL heparin added to the infusion Indication 3: 1 unit/ml heparin added to the infusion Indication 4: 50 unit bolus (0.05mL) followed by 20 units/kg/hr Increase by 5units/kg/hr if APTT is < 2x normal
Interval	Intermittent or continuous infusion
Administration	UVC, UAC, longlines, peripheral arterial lines for infusions Peripheral luers for flushes

Compatible With	<p>Solution: Dextrose 5% and 10%, dextrose saline, sodium chloride 0.45% and 0.9% and lactated ringers .</p> <p>Y-site: Acyclovir, aminophylline, amphotericin B, ampicillin, atropine, aztreonam, caffeine citrate, calcium gluconate, cefazolin, cefepime, cefotaxime, cefoxitin, ceftazidime, ceftriaxone, chloramphenicol, cimetidine, clindamycin, dexamethasone, digoxin, dobutamine, dopamine, enalaprilat, epinephrine, erythromycin lactobionate, esmolol, famotidine, fentanyl, fluconazole, flumazenil, furosemide, micafungin, hydralazine, hydrocortisone succinate, ibuprofen lysine, insulin, isoproterenol, lidocaine, linezolid, lorazepam, meropenem, metoclopramide, metronidazole, midazolam, milrinone, morphine, nafcillin, naloxone, neostigmine, nitroglycerin, oxacillin, pancuronium bromide, penicillin G, phenobarbital, phytonadione, piperacillin, piperacillin/tazobactam, potassium chloride, procainamide, propofol, propranolol, ranitidine, remifentanyl, sodium bicarbonate, sodium nitroprusside, ticarcillin/clavulanate, trimethoprim/sulfamethoxazole, vecuronium, and zidovudine.</p>
Incompatible With	<p>Y-site: Alteplase, amikacin, amiodarone, caspofungin, diazepam, gentamicin, hyaluronidase, methadone, netilmicin, phenytoin, tobramycin, and vancomycin.</p>
Interactions	Platelets, APTT, haemoglobin, haematocrit, signs of bleeding.
Monitoring	<p>Heparinised saline bags must be made up individually for each patient and not shared</p> <p>The reconstituted bags need to be discarded at the end of the nurses shift and remade by the next nurse if still required.</p> <p>Continuous infusions with heparin must be discarded at 24 hrs</p>
Stability	Store below 25°C Do not freeze
Storage	Haemorrhage, heparin induced thrombocytopenia (HIT); bruising, ulceration or skin reactions at the site of injection; allergic reactions, skin rash, chills, fever; asthma like symptoms; headache, nausea, vomiting and angioedema.
Adverse Reactions	<p>Stop heparin, treat hypovolaemia, give protamine sulphate 1mg/kg</p> <p>or</p> <p>Calculate how much heparin remains (assuming a heparin half life of 2 hours) and give 1mg of protamine per 100units of heparin remaining.</p>
Metabolism	The exact route of metabolism of heparin is unknown. It is considered most likely that heparin is metabolised in the liver and by the reticuloendothelial system. It is excreted renally with small amounts of unchanged heparin present in the urine.

Comments	<p>Due to the low concentration of heparin contained in heparinised saline and the small volumes used, problems with adverse reactions, medicine incompatibilities and interactions are rare.</p> <p>Drugs which affect platelet function, eg non-steroidal anti-inflammatory agents (ibuprofen) and systemic corticosteroids (hydrocortisone), may increase the risk of haemorrhage and should be used with caution in patients receiving heparin. Where concomitant use cannot be avoided, careful clinical and biological monitoring should be undertaken.</p> <p>Heparin injection may be clear, colourless or straw coloured and has a pH of 5 – 8.</p> <p>Derived from porcine mucus - caution if family history pork allergy.</p> <p>2021: Disrupted supply chains due to COVID necessitate sourcing from an alternative supplier (Wockhardt) under section 29 hence for the foreseeable future patient names and consultant details are required to be collated in order to facilitate ongoing procurement.</p>								
References	<ol style="list-style-type: none"> 1. NZHPA Notes on Injectable Drugs 5th Edition 2. Trissell Handbook on injectable drugs 10th Edition 3. www.medsafe.govt.nz 4. Micromedex 5. Shah PS et al. Pediatrics 119 (1): e284-91, 2007 								
Updated By	<table border="0"> <tr> <td>P Schmidt, B Robertshawe</td> <td>August 2005</td> </tr> <tr> <td>A Lynn, B Robertshawe, N Austin</td> <td>January 2008</td> </tr> <tr> <td>A Lynn, B Robertshawe</td> <td>October 2012 (re-order profile)</td> </tr> <tr> <td>A Lynn, B Robertshawe</td> <td>March 2022</td> </tr> </table>	P Schmidt, B Robertshawe	August 2005	A Lynn, B Robertshawe, N Austin	January 2008	A Lynn, B Robertshawe	October 2012 (re-order profile)	A Lynn, B Robertshawe	March 2022
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