

PROPRANOLOL HYDROCHLORIDE

Trade Name	Propranolol Hydrochloride 20mg/5mL Oral Liquid (Roxane)
Class	Non-cardioselective beta blocker
Mechanism of Action	Propranolol slows heart rate and prolongs the duration of the cardiac action potential.
Indications	<p>Indication 1: Management of hypoxic events with Tetralogy of Fallot</p> <p>Indication 2: Tachyarrhythmia</p> <p>Indication 3: Treatment of neonatal thyrotoxicosis</p> <p>Indication 4: Management of complicated haemangioma</p> <p>Refer to: Hospital Health Pathways - Infantile Haemangioma</p>
Contraindications	<p>Asthma</p> <p>Right ventricular failure secondary to pulmonary hypertension, sinus bradycardia, congenital or acquired QT prolongation, Torsades de Pointes,</p> <p>Severe renal impairment, hypokalaemia and or hypomagnesaemia</p> <p>Known hypersensitivity to propranolol hydrochloride or its excipients</p> <p>Use with caution in patients with, history of allergy /bronchospasm</p>
Supplied As	<p>IV: This product has been discontinued.</p> <p>Oral Liquid: 20mg/5mL = 4mg/mL</p> <p>(Liquid is slightly whitish green in colour)</p>
Dilution	N/A
Dosage	<p>General principles of treatment are to start at a low dose and titrate up depending on response/side effects</p> <p>The clinical situation will dictate the start dose and speed of titration eg: increase dose after a week if needed to treat haemangioma, but, may need to increase dose every 1-2 days for Tetralogy cyanotic spells or SVT</p> <p>An initial test dose of 0.25mg/kg/dose may be considered to check tolerability</p> <ol style="list-style-type: none"> Tetralogy: 0.5-1 mg/kg/dose (maximum 2mg/kg/dose) Tachyarrhythmia: 0.5-1 mg/kg/dose Thyrotoxicosis: 0.25-1mg/kg/dose Haemangioma: 0.5-1 mg/kg/dose (treat for 6-12 mths) <p>Hospital Health Pathways - Infantile Haemangioma</p> <p>Dosing ranges given cover most eventualities. In certain cases doses may need to be higher but would be on the advice of specialists</p>
Interval	<p>Indications 1,2,3: 8 hourly</p> <p>Indication 4: 12 hourly</p>

Administration	Oral
Compatible With	N/A
Incompatible With	N/A
Monitoring	<p>Prior to Starting - ECG, FBC, renal and liver function, TFT's, BP Medical Illustrations if treating a haemangioma</p> <p>After First Dose/Dose Increase – Cardiorespiratory monitoring Record HR and BP hourly for 4 hours Blood sugar check after 3 hours</p> <p>Ongoing Monitoring – Daily BP, BSL if required</p>
Stability	Manufacturers expiry or 6 months after opening, whichever is shorter
Storage	Store at room temp, Protect from light
Interactions	<p>Caffeine, phenobarbitone, rifampicin may increase metabolism and clearance of propranolol.</p> <p>Chlorpromazine and propranolol inhibit each others hepatic metabolism.</p> <p>Propranolol in infants on insulin may cause severe hypoglycaemia.</p> <p>Digoxin – risk of bradcardia.</p> <p>Amiodarone, flecainide, verapamil - may cause bradycardia and additive negative inotropic effects.</p> <p>Thyroid Hormones – monitor for possibility of altered T3 and T4</p>
Adverse Reactions	Hypotension, bradycardia, hypoglycaemia, hyperglycaemia, nausea, vomiting, diarrhoea, thrombocytopenia, bronchospasm.
Metabolism	<p>Propranolol undergoes extensive first-pass metabolism. Bioavailability = 30 – 40%. Half life is approx 3 - 6 hrs</p> <p>Primarily eliminated (96 – 99%) as metabolites in urine.</p>
Comments	<p>Excessive bradycardia caused by propranolol can be reversed using atropine - see profile for Atropine Sulphate for details.</p> <p>Sudden cessation of propranolol can cause withdrawal (sweating, tachycardia, hypertension).</p> <p>A special authority number needs to be applied for to be able to have this subsidised as an outpatient</p> <p>For patients coming to the Day Ward for dose increases if <3 months old– ensure the dose is NOT given that morning prior to coming into the Day Ward as they will do observations then give the dose in the Day Ward</p>
References	<ol style="list-style-type: none"> 1. BNF for Children 2007 2. Neonatal Formulary, The Northern Neonatal Network 3rd edition 2000 3. ADHB New Born Services Drug Protocol 4. Micromedex 5. www.medsafe.govt.nz/datasheet 6. NZHPA Notes on Injectable Drugs 5th Edition 7. www.uptodate.com

	8. Archives of Disease Sept 96(9)890 9. Starship Cardiology/Haemangioma Guidelines
Updated By	A Lynn, B Robertshawe June 2008 A Lynn, B Robertshawe Dec 2012 (re-order profile, change conc .haemangioma) A Lynn, B Robertshawe March 2013 (alter dosing for consistency, remove NPPA)