

Propranolol Therapeutic Cheat Sheet

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TRADE NAME^{1,9}

- Hemangeol®, Inderal®, InnoPran XL®, Detensol®, Novo-Pranol®, Deralin®, and Cardinol®

MECHANISM OF ACTION²

- Nonselective β -adrenergic blocker:
 - Competitive blockade of β 1- and β 2-receptors, leading to decreased cardiac output and inhibition of smooth muscle relaxation and glycogenolysis.
- IH:
 - Induces vasoconstriction, reduces angiogenesis through inhibition of vascular endothelial growth factor, and promotes endothelial cell apoptosis.

FDA-APPROVED FOR^{3,4}

- Proliferating IH requiring systemic therapy (Hemangeol)
- Hypertension
- Angina pectoris due to coronary atherosclerosis
- Migraine prophylaxis
- Hypertrophic subaortic stenosis

OFF-LABEL DERMATOLOGIC USES^{2,6-8}

- Rosacea (flushing)
- Hyperhidrosis
- Adrenergic urticaria
- Other vascular malformations (e.g. arteriovenous malformation, capillary malformation, venous malformation) and tumors (e.g. kaposiform hemangioendothelioma, angiosarcoma)
- Trichodynia

DOSING

- *Infantile Hemangioma*^{2,3}
 - Recommendations from FDA label:
 - Start treatment between 5 weeks and 5 months with 0.6 mg/kg BID.
 - Increase to 1.1 mg/kg after 1 week
 - Increase to a maintenance dose of 1.7 mg/kg after 2 weeks
 - Recommendations from published literature:
 - Start 1 mg/kg/day PO divided BID; increase to 2-3 mg/kg/day divided BID with feeds.
 - Given at least 9 hours apart with or after feeding. Hold during poor intake, vomiting, or intercurrent illness.
- *Rosacea / Flushing*⁶
- PRN: 10-40 mg PO QD-TID

WARNINGS AND PRECAUTIONS³

- Hypoglycemia: Administer during or after feeding. Do not use in patients who are not able to feed or are vomiting.
- Bradycardia and hypotension
- Bronchospasm: Avoid use in patients with asthma or lower respiratory infection.
- Increased risk of stroke in PHACE syndrome
- Hypersensitivity: Interferes with epinephrine used to treat anaphylaxis.

SIDE EFFECTS³

- Common: sleep disorders, aggravated respiratory tract infections associated with cough and fever, diarrhea, vomiting
- Rare (incidence of <1%): Second degree AV block, urticaria, alopecia, hypoglycemia, sinus bradycardia
- Side effects reported postmarketing: agranulocytosis, hallucination, purpura, psoriasiform dermatitis

DRUG INTERACTIONS^{3,10}

- Corticosteroids: Increased risk of hypoglycemia
- CYP2D6
 - Inhibitors \uparrow propranolol plasma concentration (e.g. paroxetine, fluoxetine, fluoxetine, quinidine)
 - Inducers \downarrow propranolol plasma concentration
- CYP1A2
 - Inhibitors \uparrow propranolol plasma concentration (e.g. fluvoxamine)
 - Inducers \downarrow propranolol plasma concentration (e.g. phenytoin, phenobarbital, omeprazole)
- CYP2C19
 - Inhibitors \uparrow propranolol plasma concentration (e.g. loratidine, fluvoxamine)
 - Inducers \downarrow propranolol plasma concentration (e.g. rifampin)

CONTRAINDICATIONS³

- Premature infants with corrected age <5 weeks
- Infants weighing less than 2 kg
- Known hypersensitivity to propranolol or excipients
- Asthma or history of bronchospasm
- Sinus bradycardia (<80 beats per minute)
- >1st-degree AV block
- Decompensated heart failure
- Blood pressure <50/30 mmHg
- Pheochromocytoma
- Inderal: Bronchial asthma, Sinus bradycardia, >1st-degree AV block, Cardiogenic shock, Congestive heart failure

PREGNANCY AND BREASTFEEDING³

- Pregnancy: Animal studies have shown that propranolol exposure before and during pregnancy, as well as during early postnatal development, had no adverse effects on fertility, reproductive parameters, or reproductive development even at doses exceeding those used in humans.
- Breastfeeding: Propranolol is excreted in breast milk, and available data suggest no adverse effects on nursing infants.

MONITORING³

- Prior to initiating medication, recommend: baseline weight, HR, BP; feeding history, cardiac history, respiratory history.
- When initiating medication: monitor heart rate and blood pressure for 2 hours after initiation or dose increases.
- After initiating medication, monitor ongoing for signs of hypoglycemia, bradycardia, hypotension.

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