






































Generic name TRADE (Dosage strength & forms)	Pregnancy rating	Lipid *** WATER SOLUBILITY	ISA	EFFECT on LIPIDS	Dose: 	Half-Life & Active Metab.	COMMENTS	APPROVED INDICATIONS ✓HPB; <i>italics FDA</i>	INITIAL & MAX DOSE	USUAL DOSAGE RANGE	COST/MONTH 
<b>CARDIO-SELECTIVE:</b> Alternate agent ⇒ for <b>DIABETICS</b> . <b>Cardioselectivity</b> may be lost at higher dosages.											
<b>Acebutolol</b> MONITAN, SECTRAL (100 <sup>5</sup> , 200 <sup>5</sup> , 400 <sup>5</sup> mg tablet)	B/D		YES +	neutral		3-8hrs YES	• less coldness of extremities? • ?preferred in hypercholesterolemia pts • may have less bradycardia	✓BP (od or bid) ✓ANGINA (bid) <i>VENTRICULAR ARRHYTHMIA</i>	100mg OD 400mg BID	100mg po BID 200mg po BID 400mg po OD	17 22 22
<b>Atenolol</b> TENORMIN (25, 50 <sup>5</sup> , 100 <sup>5</sup> mg tablet) TENORETIC/Apo-Atenidone (50 <sup>5</sup> , 100 <sup>5</sup> mg with 25mg chlorthalidone)	D		NO	slight		6-14 hrs NO	• commonly used ⊖ 50-150mg per day • ? cause reduced fetal growth & weight	✓BP ✓ANGINA <i>POST MI</i>	12.5-25mg OD 200mg OD	50mg po OD 100mg po OD 100mg po BID 50/25mg po OD	15 20 32 23
<b>Bisoprolol</b>   MONOCOR (5 <sup>5</sup> , 10mg tablet)	C/D		NO	neutral		10-12hrs NO	• ↓ morbidity/mortality in HF ⊖ 5mg per day	✓BP (  EDS HF in SK)	2.5mg OD (20mg OD)	5mg po OD 10mg po OD <b>HFTD</b>	 16 22
<b>Metoprolol</b> LOPRESOR, BETALOC (Vial 1mg/ml; 25 <sup>5</sup> , 50 <sup>5</sup> , 100 <sup>5</sup> mg; SR: 100mg, 200mg tabs)	C/D		NO	slight		3-7 hrs NO	✓ <b>SR product</b> combines <b>β1 selectivity, 24hr BP control &amp; efficacy in angina, post-MI, &amp; HF</b>	✓BP ✓ANGINA ✓POST MI ✓HF	12.5-25mg BID 200mg BID	50mg po BID 100mg po BID <b>HFTD</b> 100-200mg SR po OD	13 16 16-24
<b>NON-SELECTIVE</b>											
<b>Nadolol</b> CORCARD (40 <sup>5</sup> , 80 <sup>5</sup> , 160 <sup>5</sup> mg tablet)	C/D		NO	moderate		10-24hr NO	• only BB to ↑ renal blood flow ⊖ 20-160 mg/d; ?Tx: esophageal varices <sup>19</sup>	✓BP ✓ANGINA	40mg OD 120mg BID	40mg po OD 80mg po OD	16 20
<b>Oxprenolol</b> TRASICOR (40 <sup>5</sup> , 80 <sup>5</sup> mg, SR 80, 160mg tablet)	C/D		YES ++	neutral ?		1-2 hr YES	• avoid post-MI SR = <i>SLOW TRASICOR</i>	✓BP	20 mg TID 160mg TID	80mg po BID 160mg SR po OD	35 35
<b>Pindolol</b> VISKEN (5 <sup>5</sup> , 10 <sup>5</sup> , 15 <sup>5</sup> mg tablet) VISKAZIDE (10mg with 25 <sup>5</sup> , 50 <sup>5</sup> mg HCT)	B/D		YES +++	neutral		3-4hr NO	• avoid post-MI • ?preferred in symptomatic bradycardia pts	✓BP (bid; ?od) ✓ANGINA (tid-qid)	5mg OD-BID 20mg BID	10mg po BID 15mg po BID 10/25mg po OD	29 49 32
<b>Propranolol</b> INDERAL (10 <sup>5</sup> , 20 <sup>5</sup> , 40 <sup>5</sup> , 80 <sup>5</sup> & 120 <sup>5</sup> mg tab; LA 60, 80, 120, 160mg cap; Vial 1mg/ml)	C/D		NO	moderate		3-4hr YES	⊖ >80mg per day • Uses: GI tract bleeds due to esophageal varices, thyrotoxicosis & anxiety • lithium tremor ~10-20mg tid	✓BP ✓ANGINA ✓POST MI ✓ARRHYTHMIA ✓ATRIAL FIB ✓TREMOR ✓HEADACHE	10-40mg BID 320mg LA OD	40mg po BID 80mg po BID 120mg LA po OD 160mg LA po OD	10 12 33 38
<b>Sotalol</b> SOTACOR (80 <sup>5</sup> , 160 <sup>5</sup> mg tablet)	B/D		NO	moderate		10-13hr NO	• Class 2 & 3 antiarrhythmic may be preferred for SVT's • not suitable post-MI due to pro-arrhythmic effect	✓VENTRICULAR ARRHYTHMIA ✓ATRIAL ARRHYTHMIA	40mg BID 160mg TID	40mg po BID 80mg po BID 160mg po OD	23 38 25
<b>Timolol</b> BLOCADREN (5 <sup>5</sup> , 10 <sup>5</sup> , 20 <sup>5</sup> mg tablet)	C/D		NO	moderate		4-5hr NO	⊖ ~10mg bid • ophthalmic suspension for Tx of glaucoma (0.25, 0.5%)	✓BP (bid; ?od) ✓POST MI ✓ANGINA (bid) ✓HEADACHE	5mg OD-BID 20mg TID	10mg po BID 20mg po OD	25 25
<b>NON-SELECTIVE BETA &amp; ALPHA -1 BLOCKADE</b>											
<b>Carvedilol</b>   COREG (3.125, 6.25, 12.5 & 25mg tablet)	C/D		NO	neutral		6-8hr NO	• for adjunctive Tx in pts with stable HF refractory to other treatments (start with 3.125mg po bid & ↑ q2-wks)	✓HEART FAILURE COMET-Lancet Jul03 (effective but expensive)	3.125mg - 6.25mg BID 50mg BID	6.25mg po BID 12.5mg po BID 25mg po BID <b>HFTD</b>	 58 58 58
<b>Labetalol</b> Vial 5mg/ml TRANDATE (100 <sup>5</sup> , 200 <sup>5</sup> mg tablet)	C/D		+?	neutral		6-8hr NO	β:α blockade ratio = 3:1 • postural hypotension • IV in hypertensive crises	✓BP ✓ANGINA ECLAMPSIA Used in pregnancy	100mg OD 600mg BID	100mg po BID 200mg po BID 200mg po TID	19 28 32

⊖=scored tab  EDS=Exception Drug Status =prior NIHB approval ⊕=migraine prophylaxis ALT=alternate COST=total cost to patient HF=heart failure **HFTD**=heart failure target dose LA=Long-acting LVH=left ventricular hypertrophy SR=sustained release  
 \* **Water-soluble:** tend toward longer t 1/2's; renal elimination (  =↓ dose in renal failure); \*\* **Lipid-soluble:** tend toward shorter t 1/2's; hepatic elimination (  =↓ dose in ↓ hepatic fx); drug interactions due to altered metabolism.  
**DRUG Interactions:** amiodarone, antidiabetics, calcium channel blockers synergistic & ↓ heart rate, cimetidine ↑ β blocker effect, clonidine hypertension crisis, digoxin ↓ heart rate, insulins, NSAIDS ↑ blood pressure & ↓ renal function & phenobarbital ↓ β blocker effect  
**SIDE Effects:** fatigue, insomnia, vivid dreams, ↓HR, impotence, ↓ exercise tolerance, dizzy, cold extremities, bronchospasm, headache, mask & delay Sx hypoglycemia, ↑TG, ↓HDL, hallucinations & depression.  
 t 1/2 does not necessarily correlate with duration of action. **ISA** (intrinsic sympathetic activity): may have less negative effects on heart rate, glucose, lipids, respiratory system; **AVOID** agents with ISA in patients post MI or CHF.  
**Angina:** Higher doses may be required. **CHF:** Use low dosages initially & titrate upward. **USEFUL:** to prevent migraines, tremors, atrial arrhythmias, perioperative hypertension & thyrotoxicosis. **Beneficial** → limits infarct size & ↓ arrhythmia's.  
**ROLE:** 1<sup>st</sup> line ⇒ **ANGINA, Post MI, LVH <55yr, uncomplicated HTN for age ≤60yr**; +ACEI in SYSTOLIC Dysfunction; Alt ⇒ **DIABETICS** (cardioselective agents). Not 1<sup>st</sup> line in elderly unless post-MI or angina.  
**Contraindications:** asthma, 2<sup>nd</sup> or 3<sup>rd</sup> degree heart block, uncompensated HF & severe peripheral arterial disease. May **WORSEN** → PAD, HF & Raynauds. **SUDDEN WITHDRAWAL** can exacerbate angina/MI.

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- <sup>1</sup> Major Outcomes in High-Risk Hypertensive Patients Randomized to Angiotensin-Converting Enzyme Inhibitor or Calcium Channel Blocker vs Diuretic. The Antihypertensive and Lipid-Lowering Treatment to Prevent Heart Attack Trial (**ALLHAT**). The ALLHAT Officers and Coordinators for the ALLHAT Collaborative Research Group. JAMA. 2002;288:2981-2997.
- <sup>2</sup> 2001 Canadian Hypertension Recommendations: What's New & What's Not so New but is Still Important. CJHP 2002;55:4651.
- <sup>3</sup> FA McAlister, M Levine, KB Zarnke, et al. The 2000 recommendations for the management of hypertension. Can J Cardiol 2001; 17(5):543-559.
- <sup>4</sup> 1999 Canadian recommendations for the management of hypertension. CMAJ 1999;161(Suppl):S1-S16.
- <sup>5</sup> **1999 World Health Organization**—International Society of Hypertension Guidelines:Management of Hypertension. J Hypertens 1999;17:151-183.
- <sup>6</sup> 6<sup>th</sup> Report-Joint National Committee on Prevention, Detection, Evaluation & Treatment of High Blood Pressure. Arch Intern Med 1997;157:2413-46.
- <sup>7</sup> Drugs for hypertension. Med Lett Drugs Ther 2001;43:17-22.
- <sup>8</sup> Drugs in Pregnancy & Lactation, 6<sup>th</sup> Ed. Briggs GE, et al. Wilkins; Baltimore, MD.
- <sup>9</sup> Micromedex 2004 →/hcs.micromedex.com.
- <sup>10</sup> Hansten & Horn's Drug Interactions: Analysis & Management-Facts & Comparisons 2004.
- <sup>11</sup> **Treatment Guidelines: Drugs for Hypertension** from The Medical Letter Feb **2003**.
- <sup>12</sup> The **2004** Canadian Hypertension Education Program **Recommendations** [www.chs.md](http://www.chs.md)
- <sup>13</sup> ALLHAT Working Group. Major cardiovascular events in hypertensive patients randomized to doxazosin vs chlorthalidone: the antihypertensive and lipid-lowering treatment to prevent heart attack trial (**ALLHAT**). JAMA 2000;283:1967-75.
- <sup>14</sup> Liu P, Arnold JM, Belenkie I, Demers C, Dorian P, Gianetti N, Haddad H, Howlett J, Ignazewski A, Jong P, McKelvie R, Moe G, Parker JD, Rao V, Rouleau JL, Teo K, Tsuyuki R, White M, Huckel V, Issac D, Johnstone D, LeBlanc MH, Lee H, Newton G, Niznick J, Ross H, Roth S, Roy D, Smith S, Sussex B, Yusuf S. The 2002/3 Canadian Cardiovascular Society consensus guideline update for the diagnosis and management of **heart failure**. Can J Cardiol. **2003** Mar 31;19(4):347-56.
- <sup>15</sup> **Treatment Guidelines: Drugs for Treatment of Heart Failure** from The Medical Letter April **2003**
- <sup>16</sup> Jessup M, Brozena S. Heart Failure. N Engl J Med 2003;348:2007-18.
- <sup>17</sup> The Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure (The **JNC 7**); JAMA. **2003** May;289(19):2560-72.
- <sup>18</sup> ACC/AHA Guidelines for the Management of Patients with ST-Elevation Myocardial Infarction **2004**. <http://www.acc.org/clinical/guidelines/stemi/index.pdf>
- <sup>19</sup> Merkel C, Marin R, Angeli P, et al.. A placebo-controlled clinical trial of nadolol in the prophylaxis of growth of small esophageal varices in cirrhosis. Gastroenterology. 2004 Aug;127(2):476-84.