


**ACE INHIBITOR (ACEI) / ANGIOTENSIN II RECEPTOR BLOCKER (ARB): Comparison Chart** 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21 L. Regier, B. Jensen www.RxFiles.ca Sept 04

NAME:Generic/TRADE (Dosage strength & forms)	Pregnancy rating: All ACEI & ARBs	FOOD EFFECT	Class / Prodrug	ONSET & (PEAK)	Duration (hrs) <sup>21</sup>	INDICATIONS: ✓HPB Other Indications-US FDA	DOSE: INITIAL (Maximum)	USUAL DOSE <sup>#</sup> RANGE	\$ COST / 30 Day <sup>+</sup> 
<b>ANGIOTENSIN CONVERTING ENZYME INHIBITORS ACEI: ROLE: 1<sup>ST</sup> LINE: HF, Diabetes, Post MI, Uncomplicated HTN, LVH, Prior CVA/TIA, renal disease &amp; ALL Coronary Artery Disease pts.</b>									
<b>Benazepril</b> (5 <sup>5</sup> , 10 <sup>5</sup> , 20 <sup>5</sup> mg tab)	<b>LOTENSIN</b>	↓ rate not extent	carboxy / PD-YES	60min (2-4hr)	24	✓BP	5mg OD (40mg OD)	10mg po OD 20mg po OD	<b>32</b> 36
<b>Captopril</b> (6.25, 12.5, 25 <sup>5</sup> , 50 <sup>5</sup> , 100 <sup>5</sup> mg tab)	<b>CAPOTEN</b>	↓ absorption	sulfhydryl/ PD-NO	15-30min (1-2hr)	6-12	✓BP ✓HF ✓Post MI ✓Diabetic Nephropathy	6.25mg BID (150mg TID)	25mg po BID 50mg po TID <b>HFTD</b>	<b>24</b> 52
<b>Cilazapril</b> (1 <sup>5</sup> , 2.5 <sup>5</sup> , 5 <sup>5</sup> mg tab) <b>Cilazapril/HCT</b> • (5mg/12.5 <sup>5</sup> mg tab)	<b>INHIBACE</b> <b>INHIBACE PLUS</b>	↓ absorption	carboxy / PD-YES	60min (3-7hr)	12-24	✓BP ✓HF	1mg OD (10mg OD)	5mg po OD 10mg po OD 5mg/12.5mg po OD	<b>36</b> 66 36
<b>Enalapril</b> (2.5 <sup>5</sup> , 5 <sup>5</sup> , 10, 20mg tab) <b>Enalapril/HCT</b> • (5mg/12.5mg, 10mg/25mg tab)	<b>VASOTEC</b> (Enalaprilat <b>Val</b> 1.25mg/ml) <b>VASERETIC</b>	<b>NONE</b>	carboxy / PD-YES	60min (4-6hr)	12-24	✓BP (including Age >6yr) ✓HF (10-20mg bid) <b>HFTD</b> Post MI, Pheochromocytoma, Scleroderma Renal Crisis	2.5mg OD (20mg BID)	10mg po OD 20mg po OD 10mg po BID 10mg/25mg po OD	<b>43</b> 50 78 43
<b>Fosinopril</b> (10 <sup>5</sup> , 20mg tab)	<b>MONOPRIL</b>	↓ rate not extent	phosphoryl / PD-YES	60min (2-6hr)	24	✓BP HF	10mg OD (40mg OD)	20mg po OD 40mg po OD	<b>31</b> 55
<b>Lisinopril</b> (5 <sup>5</sup> , 10, 20mg tab) <b>Lisinopril/HCT</b> • (10mg/12.5mg; 20mg/12.5mg; 20mg/25mg tab)	<b>ZESTRIL, PRINIVIL</b> <b>ZESTORETIC, PRINZIDE</b>	<b>NONE</b>	carboxy / PD-NO	60min (4-6hr)	24	✓BP (10-40mg od <sup>ALLHAT</sup> ) ✓HF (10-35mg od) <b>HFTD</b> <sup>ATLAS</sup> Uremic hypertrophic cardiomyopathy	2.5-5mg OD (40mg OD)	10-20mg po OD 10mg/12.5mg po OD 20mg/12.5mg po OD	<b>30-35</b> 30 35
<b>Perindopril</b> (2, 4 <sup>5</sup> , 8 mg tab) <b>Perindopril/Indapamide</b> <b>COVERSYL PLUS</b> (4/1.25mg tab)	<b>COVERSYL</b> <b>COVERSYL PLUS</b>	may ↓ effect	carboxy / PD-YES	60min (2-4hr)	24	✓BP, HF <sup>CAD pts → EUROPA</sup> 8mg od <sup>PROGRESS</sup> ↓stroke when indapamide added to perindopril	2mg OD (16mg OD)	4-8mg po OD 4/1.25 mg po OD <sup>22</sup>	<b>34-45</b> 41
<b>Quinapril</b> 5 <sup>5</sup> , 10, 20, 40mg tab) <b>Quinapril/HCT</b> • (10mg/12.5 <sup>5</sup> mg; 20mg/12.5 <sup>5</sup> mg; 20/25mg )	<b>ACCUPRIL</b> <b>ACCURETIC</b>	↓ rate not extent	carboxy / PD-YES	60min (2-4hr)	24	✓BP ✓HF	5mg OD (40mg OD)	10mg po OD 40mg po OD 20mg/12.5mg po OD	<b>38</b> 38 38
<b>Ramipril</b> (1.25, 2.5, 5, 10mg capsule)	<b>ALTACE</b>	<b>NONE</b>	carboxy / PD-YES	60min (4-6hr)	24	✓BP, Post MI, HF (5mg bid) <b>HFTD</b> ✓High CV risk <sup>HOPE</sup> (vs placebo)	1.25-2.5 OD (20mg OD)	5mg po OD 10mg po <b>HS</b> <sup>HOPE</sup> <sup>23</sup>	<b>34</b> 41
<b>Trandolapril</b> (0.5 <sup>5</sup> , 1, 2, 4 <sup>5</sup> mg capsule)	<b>MAVIK</b>	↓ rate not extent	carboxy / PD-YES	30min (2-4hr)	24	✓BP	0.5-2mg OD (4mg OD)	2mg po OD 4mg po OD	<b>35</b> 41
<b>ANGIOTENSIN II RECEPTOR BLOCKERS ARBs: ROLE: 1<sup>ST</sup> LINE: Diabetes, uncomplicated HTN, ISH, LVH &amp; alternative for patients who do not tolerate ACE inhibitor-induced cough/side effects.</b>									
<b>Candesartan cilexetil</b> (8 <sup>5</sup> , 16 <sup>5</sup> mg tab) 16/12.5 <sup>5</sup> mg HCT•	<b>ATACAND</b> <b>ATACAND PLUS</b>	<b>NONE</b>	PD-YES	? (3-5 hr)	24	✓BP heart failure → (CHARM 32mg od \$87)	4mg OD (32mg OD)	8mg po OD 16mg po OD	<b>47</b> 47
<b>Eprosartan</b> (400, 600 mg tab)	<b>TEVETEN</b>	↓ rate	PD-NO	?(4hr)	12-24	✓BP	400mg OD (800mg OD)	600mg po OD	<b>44</b>
<b>Irbesartan</b> (75, 150, 300mg tab) <b>Irbesartan/HCT</b> • (150mg /12.5mg, 300mg/12.5mg tab)	<b>AVAPRO</b> <b>AVALIDE</b>	<b>NONE</b>	PD-NO	60min (2-4 hr)	24	✓BP ✓Delay diabetic/early nephropathy <sup>IRMA II, IDNT</sup>	75mg OD (300mg OD)	150mg po OD 300mg po OD 150mg/12.5mg po OD	<b>46</b> 46 46
<b>Losartan</b> (25, 50, 100mg tab) <b>Losartan/HCT</b> • (50mg / 12.5mg tab; <b>DS</b> =100mg/25mg tab)	<b>COZAAR</b> <b>HYZAAR</b>	<b>NONE</b>	Active Metabolite: E-3174	60min (3-6hr)	12-24	✓BP, Delay diabetic nephropathy <sup>RENAAL</sup> LVH pts → losartan 100mg od \$48 ↓stroke vs atenolol <sup>5vs6.7%; NNT=59 LIFE</sup>	25mg OD (100mg OD)	25mg po OD 50mg po OD 50mg/12.5mg po OD	<b>48</b> 48 48
<b>Telmisartan</b> (40 <sup>5</sup> , 80 <sup>5</sup> mg tab) 80/12.5mg HCT• tab	<b>MICARDIS</b> <b>MICARDIS PLUS</b>	<b>NONE</b>	PD-NO	60min (3hr)	24	✓BP	40mg OD (80mg OD)	80mg po OD 80mg/12.5mg po OD	<b>45</b> 45
<b>Valsartan</b> (80, 160mg cap / tab) <b>Valsartan/HCT</b> • 80 & 160mg/12.5mg, 160/25 tab <b>DIOVAN HCT</b>	<b>DIOVAN</b> <b>DIOVAN HCT</b>	↓ rate not extent	PD-NO	2 hr (4-6 hr)	12-24	✓BP heart failure → (Val-HeFT 160mg bid) post MI → (Valiant 160mg bid \$82)	80mg OD (320mg OD)	80-160mg po OD <sup>VALUE</sup> 160mg/12.5mg po OD	<b>45</b> 45

• ZESTORETIC, PRINZIDE, VASERETIC, INHIBACE PLUS, COVERSYL PLUS, ACCURETIC, ATACAND PLUS, AVALIDE, HYZAAR, MICARDIS PLUS & DIOVAN HCT → synergistic low-dose combos → ↓BP more than doubling the ACEI/ARB dose.  
<sup>#</sup> IF Renal Dysfunction → use low dose; MONITOR<sup>24</sup>: SCr, BUN, fluid balance & lytes upon & after 1 week of starting. If ↑K >5.6 or ↑SCr rise >30% over baseline this may warrant stopping the ACEI or ARB (if not related to ↓ volume).  
<sup>5</sup> = scored tab X = non formulary SK. ACE=angiotensin converting enzyme ARB=angiotensin receptor blocker BP=blood pressure COST=markup & fee HCT=hydrochlorothiazide HF=heart failure HFTD=heart failure target dose ISH=isolated systolic htn LVH=left ventricular hypertrophy MI=myocardial infarction PD=prodrug  
**Renal Risk factors** for acute renal failure: bilateral renal artery stenosis, stenosis of a solitary kidney, HF with aggressive diuretic therapy or excessive vasodilation, or volume depletion from any cause.  
**HF:** Relatively high TARGET DOSES often used in HF studies with reduced mortality as outcome (NOT all patients able to tolerate target dose). May use lower initial dose & titrate as tolerated (monitor BP & renal function)  
**INTERACTIONS ACEI:** diuretics, K sparing → ↑K<sup>+</sup>, lithium ↑ lithium levels, NSAIDs ↓ BP effect & potassium ↑K<sup>+</sup>; **ARB:** ↑ lithium; losartan → fluconazole & rifampin ↓ losartan effect, & ↓ uric acid level; telmisartan → ↑ digoxin level; irbesartan → fluconazole ↑ irbesartan effect.  
**SIDE Effects** cough 10% with ACEI, dry / nonproductive, loss of taste, rash esp. captopril (sulf), headache, dizziness, ↓ BP, fatigue, ↑K<sup>+</sup>, acute renal failure, angioedema ~0.5%, hepatotoxicity, dysgeusia, pancreatitis & blood dyscrasias (**ARBs** generally less cough, headache & dizziness than ACEIs).  
**Contraindications: ACEI & ARBs:** bilateral artery stenosis (or solitary kidney stenosis if only 1 kidney), history of angioedema & pregnancy. © not covered by NIHB

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- <sup>9</sup> Micromedex 2004 →/hcs.micromedex.com.
- <sup>10</sup> Hansten & Horn's Drug Interactions: Analysis & Management-Facts & Comparisons 2003.
- <sup>11</sup> **Treatment Guidelines: Drugs for Hypertension** from The Medical Letter Feb **2003**.
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- <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.
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