

# Clinical trials of angiotensin-receptor blockers for heart failure in patients already receiving ACE inhibitor

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## 1 angiotensin receptor blocker

Trial	Treatments	Patients	Trials design and methods
<b>losartan vs enalapril</b>			
<b>Dickstein et al. , 1995</b> n=108/58 follow-up: 8 wk	Losartan, 25 mg, 50mg daily versus Enalapril, 10 mg twice daily	patients with moderate or severe chronic heart failure in New York Heart Association functional class III or IV and an ejection fraction $\leq$ 35%	Parallel groups double blind
<b>Lang et al. , 1997</b> n=78/38 follow-up: 12 wk	Losartan titrated to 25 mg ou 50 mg daily versus Enalapril, titrated to 10 mg twice daily	patients with congestive heart failure (New York Heart Association functional classes II to IV) and left ventricular ejection fraction $\leq$ 45% previously treated with stable doses of ACE inhibitors and diuretic agents, with or without concurrent digitalis and other vasodilators	Parallel groups Double blind US, Canada
<b>telmisartan vs enalapril</b>			
<b>REPLACE , 2001</b> n=301/77 follow-up: 12 wk	Telmisartan, 10 mg, 20mg, 40mg, 80mg daily versus Enalapril, 10 mg twice daily	ambulatory patients at least 21 years of age, in sinus rhythm, with chronic moderate symptomatic heart failure (New York Heart Association class III) and a left ventricular ejection fraction of 40% or lower	Parallel groups Double blind
<b>valsartan vs enalapril</b>			
<b>HEAVEN , 2002</b> n=70/71 follow-up: 12 wk	Valsartan, 160 mg daily versus Enalapril, 10 mg twice daily	Men and women with mild/moderate heart failure stabilised on an angiotensin-converting enzyme inhibitor and left ventricular ejection fraction 0.45 or less	Parallel groups Double blind

## References

### Dickstein et al., 1995:

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### Lang et al., 1997:

Lang RM, Elkayam U, Yellen LG, Krauss D, McKelvie RS, Vaughan DE, Ney DE, Makris L, Chang PI Comparative effects of losartan and enalapril on exercise capacity and clinical status in patients with heart failure. The Losartan Pilot Exercise Study Investigators. J Am Coll Cardiol 1997 Oct;30:983-91 [9316528]

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heart failure. The replacement of angiotensin converting enzyme inhibition (REPLACE) investigators. Int J Cardiol 2001 Feb;77:131-8; discussion 139-40 [11182175]

### HEAVEN, 2002:

Willenheimer R, Helmers C, Pantev E, Rydberg E, Lofdahl P, Gordon A Safety and efficacy of valsartan versus enalapril in heart failure patients. Int J Cardiol 2002 Oct;85:261-70 [12208593]

## 2 ARBs added to ACEI

Trial	Treatments	Patients	Trials design and methods
<b>candesartan+ACE inhibitor vs ACE inhibitor only</b>			
CHARM-Added , 2003 n=1276/1272 follow-up: Median, 41 mo	Candesartantarget dose 32 mg once daily versus Placebo	patients with New York Heart Association functional class III/IV CHF and left-ventricular ejection fraction40% or lower, and who were being treated with ACE inhibitors.	Parallel groups double blind 26 countries
<b>eprosartan+ACE inhibitor vs ACE inhibitor only</b>			
ADEPT , 2001 n=18/18 follow-up: 8 wk	Eprosartan, 400 to 800 mg twice daily versus Placebo	patients with stable New York Heart Association class II-IV CHF receiving ACE inhibitor therapy	Parallel groups double blind
<b>irbesartan+ACE inhibitor vs ACE inhibitor only</b>			
Tonkon et al. , 2000 n=57/52 follow-up: 12 wk	Irbesartan, 150 mg daily (plus ACE inhibitor) versus Placebo (plus ACE inhibitor)	patients with heart failure (New York Heart Association functional class II and III) and left ventricular ejection fraction (LVEF) <or = 40% received stable doses of ACE inhibitors and diuretics	Parallel groups double blind
<b>losartan+ACE inhibitor vs ACE inhibitor only</b>			
Hamroff et al. , 1999 n=16/17 follow-up: 6 mo	Losartan, 50 mg daily (plus ACE inhibitor) versus Placebo (plus ACE inhibitor)	patients with severe congestive heart failure (NYHA III-IV) despite treatment with maximally recommended or tolerated doses of ACE inhibitors	Parallel groups double blind
<b>valsartan+ACE inhibitor vs ACE inhibitor only</b>			
V-HeFT , 1999 n=55/28 follow-up: 4 wk	Valsartan 80 mg and 160mg twice daily (plus ACE inhibitor) versus Placebo (plus usual ACE inhibitor)	Patients with stable symptomatic congestive heart failure (CHF) receiving long-term ACE inhibitor therapy (NYHA functional class II,III, or IV) and PCWP >or=to 15 mm Hg	Parallel groups Double blind US
Val-HeFT , 2001 n=2511/2499 follow-up: 23 mo	Valsartan, 160 mg twice daily (plus ACE inhibitor) versus Placebo (plus ACE inhibitor)	patients with heart failure of New York Heart Association (NYHA) class II, III, or IV	Parallel groups Double blind 16 countries

## References

### CHARM-Added, 2003:

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**Hamroff et al., 1999:**

Hamroff G, Katz SD, Mancini D, Blaufarb I, Bijou R, Patel R, Jondeau G, Olivari MT, Thomas S, Le Jemtel TH Addition of angiotensin II receptor blockade to maximal angiotensin-converting enzyme inhibition improves exercise capacity in patients with severe congestive heart failure. *Circulation* 1999 Mar 2;99:990-2 [[10051289](#)]

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### 3 About TrialResults-center.org

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Rigorous meta-analysis method is used to populate TrialResults-center: widespread search of published and non published trials, study selection using pre-specified criteria, data extraction using standard form.

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