Losartan did not differ from captopril for reducing all-cause mortality after acute myocardial infarction


**Question**
In patients with acute myocardial infarction and heart failure or left ventricular dysfunction, is losartan more effective than captopril for reducing all-cause mortality?

**Design**
Randomized (allocation concealed*), blinded (patients, outcome assessors, and monitoring committee),* controlled trial with mean follow-up of 2.7 years.

**Setting**
329 centers in 7 European countries.

**Patients**
5477 patients ≥ 50 years of age (mean age 67 y, 71% women) who had objectively documented acute myocardial infarction and heart failure during the acute phase or a new Q-wave anterior infarction or reinfarction. Exclusion criteria included supine systolic arterial blood pressure < 100 mm Hg at the time of randomization, current receipt of an angiotensin-converting enzyme (ACE) inhibitor or angiotensin II antagonist, and unstable angina. Follow-up was 100%.

**Intervention**
Patients were allocated and titrated to a target dose of losartan, 50 mg once daily (n = 2744), or captopril, 50 mg 3 times daily (n = 2733).

**Main Outcome Measures**
All-cause mortality. Secondary outcomes included a composite endpoint of sudden cardiac death or resuscitated cardiac arrest, and adverse effects.

**Main Results**
Analysis was by intention to treat. The groups did not differ for all-cause mortality or the composite endpoint of sudden death or resuscitated cardiac arrest (Table). The rates of adverse effects, including cough, hypotension, skin rash, and taste disturbance, were lower in the losartan group than in the captopril group (Table). Fewer patients in the losartan group than in the captopril group discontinued the allocated study medication because of adverse effects (17% vs 23%, P < 0.001).

**Conclusion**
In patients with acute myocardial infarction and heart failure or left ventricular dysfunction, losartan did not differ from captopril for reducing all-cause mortality.

Source of funding: Merck, Sharp and Dohme Research Laboratories.

For correspondence: Professor K. Dickstein, University of Bergen, Rogaland, Norway. E-mail trout@online.no.

*See Glossary.

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>Losartan</th>
<th>Captopril</th>
<th>RRI (95% CI)</th>
<th>NNH (CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>All-cause mortality</td>
<td>18.2%</td>
<td>16.4%</td>
<td>13% (−1 to 28)</td>
<td>Not significant</td>
</tr>
<tr>
<td>Composite endpoint</td>
<td>8.7%</td>
<td>7.4%</td>
<td>19% (−1 to 43)</td>
<td>Not significant</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>Losartan</th>
<th>Captopril</th>
<th>RRR (CI)</th>
<th>NNT (CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cough</td>
<td>9.3%</td>
<td>18.7%</td>
<td>50% (43 to 57)</td>
<td>11 (9 to 14)</td>
</tr>
<tr>
<td>Hypotension</td>
<td>13.3%</td>
<td>16.3%</td>
<td>18% (7 to 28)</td>
<td>34 (21 to 91)</td>
</tr>
<tr>
<td>Skin rash</td>
<td>3.1%</td>
<td>4.6%</td>
<td>32% (11 to 48)</td>
<td>68 (40 to 219)</td>
</tr>
<tr>
<td>Taste disturbance</td>
<td>0.6%</td>
<td>2.7%</td>
<td>78% (63 to 87)</td>
<td>48 (36 to 69)</td>
</tr>
</tbody>
</table>

*Composite endpoint = sudden cardiac death or resuscitated cardiac arrest. Abbreviations defined in Glossary; RRI, RRR, NNH, NNT, and CI calculated from data in article.

Dickstein and colleagues excluded 43% of otherwise-eligible patients because of previous treatment with either an ACE inhibitor or an ARB, and most patients received aspirin, β-blockers, and diuretics during the trial. Although multiple- rather than single-drug therapy is common fare, clinicians should not yet routinely include ARBs in their pantry of proven effective therapies for patients with heart disease.

Cynthia D. Mulrow, MD, MS; University of Texas Health Science Center San Antonio, Texas, USA

**References**