Isosorbide dinitrate plus hydralazine was effective for advanced heart failure in black patients


Clinical impact ratings GP/FP/Primary care ★★★★★☆ IM/Ambulatory care ★★★★★☆ Internal medicine ★★★★★☆ Cardiology ★★★★★☆

Methods

Design: randomised placebo controlled trial (African-American Heart Failure Trial [A-HeFT]).

Allocation: concealed *

Blinding: blinded (clinicians, patients, data collectors, outcome assessors, monitoring committee, and statisticians).*

Follow up period: 18 months.

Setting: 161 centres in the US.

Patients: 1050 adults (mean age 57 y, 60% men) self identified as black who had NYHA class III or IV HF for ≥3 months, had left ventricular dysfunction in the preceding 6 months, and were receiving standard HF therapy. Exclusion criteria included acute MI, stroke, cardiac surgery, or percutaneous coronary intervention within the preceding 3 months; clinically significant valvular heart disease, hypertrophic or restrictive cardiomyopathy; active myocarditis; and hypertension.

Intervention: patients were stratified for use and non-use of β-blockers and allocated to isosorbide dinitrate, 20 mg, plus hydralazine hydrochloride, 37.5 mg, in 1 tablet 3 times daily (n = 518), or placebo (n = 532). The dose was increased to 2 tablets 3 times daily in the absence of side effects.

Outcomes: composite score of weighted values for all cause death, first hospital admission for HF during 18 month follow up, and change in quality of life at 6 months.

Patient follow up: 100% (intention to treat analysis).

*See glossary.

MAIN RESULTS

Based on a prespecified interim analysis, the study was stopped after 1050 of the planned 1100 patients were randomised because the placebo group had more deaths. The table shows the results.

CONCLUSION

In black patients with advanced heart failure, fixed dose isosorbide dinitrate plus hydralazine improved survival and quality of life.

Isosorbide dinitrate plus hydralazine (ID+H) vs placebo for heart failure (HF) in black patients at mean 10 months*

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>ID + H</th>
<th>Placebo</th>
<th>95% CI for the difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean composite score</td>
<td>−0.1</td>
<td>−0.5</td>
<td>0.16 to 0.64</td>
</tr>
<tr>
<td>Mean QOL score change at 6 mo</td>
<td>−5.6</td>
<td>−2.7</td>
<td>0.37 to 3.4</td>
</tr>
<tr>
<td>All cause death</td>
<td>6.2%</td>
<td>10%</td>
<td>39% (7.7 to 60)</td>
</tr>
<tr>
<td>First hospital admission for HF</td>
<td>16%</td>
<td>24%</td>
<td>33% (14 to 47)</td>
</tr>
</tbody>
</table>

RRR (CI): NNT (CI)

Barry M Massie, MD
University of California, San Francisco; San Francisco, California, USA

For correspondence: Dr A Taylor, University of Minnesota Medical School, Minneapolis, MN, USA. taylo135@umn.edu
Source of funding: NitroMed.