

Heart 2006;92:1434-1440 doi:10.1136/hrt.2005.079764

Cardiovascular medicine

Effects of torasemide on cardiac sympathetic nerve activity and left ventricular remodelling in patients with congestive heart failure

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Accepted 24 March 2006

Published Online First 18 April 2006

Abstract

Objective: To determine the effect of torasemide, a loop diuretic with antialdosteronergic properties, compared with furosemide on cardiac sympathetic nerve activity in patients with congestive heart failure (CHF).

Methods: 40 patients with non-ischaemic CHF (left ventricular ejection fraction (LVEF) < 45%) were randomly assigned to torasemide (4–8 mg/day; n = 20) or furosemide (20–40 mg/day; n = 20). All patients were also treated with angiotensin-converting enzyme inhibitor. The delayed heart to mediastinum count (H/M) ratio, delayed total defect score (TDS) and washout rate were determined from iodine-123 meta-iodobenzylguanidine measured before and 6 months after treatment. Left ventricular end diastolic volume (LVEDV), left ventricular end systolic volume (LVESV) and LVEF were also determined by echocardiography.

Results: After treatment, in patients receiving torasemide, TDS decreased from 44 (8) to 36 (8) ($p < 0.001$), H/M ratio increased from 1.61 (0.19) to 1.77 (0.24) ($p < 0.001$), and washout rate decreased from 52 (12)% to 41 (14)% ($p = 0.001$). In addition, LVEDV decreased from 173 (22) ml to 147 (30) ml ($p < 0.001$) and LVESV decreased from 117 (19) ml to 95(24) ml ($p < 0.001$). Although LVEF tended to increase, the change was not significant (from 31 (7)% to 34 (7)%, NS). Conversely, these parameters did not change significantly in patients receiving furosemide. Moreover, percentage change of TDS was significantly correlated with percentage change of LVEDV ($r = 0.473$, $p < 0.05$) and of LVESV ($r = 0.579$, $p < 0.01$) after torasemide treatment.

Conclusion: These findings indicate that torasemide treatment can ameliorate cardiac sympathetic nerve activity and left ventricular remodelling in patients with CHF.

Articles citing this article

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The Annals of Pharmacotherapy 2009;**43**:1836-1847

[\[Abstract\]](#) [\[Full text\]](#) [\[PDF\]](#)

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JNM 2008;**49**:907-914

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JNM 2007;**48**:1993-2000

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