Improvement in left ventricular ejection fraction and reverse remodeling in elderly heart failure patients on intense NT-proBNP-guided therapy

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BACKGROUND
In chronic heart failure, left ventricular ejection fraction (LVEF) is considered to be stable. Intensified therapy may improve survival, but little is known whether this is associated with reverse remodeling and dependent on age and NT-proBNP guidance. We aimed to define the evolution of LVEF under intensified therapy in relation to age and NT-proBNP guidance.

METHODS AND RESULTS
Echocardiography was performed at baseline, 12 and 18 months in TIME-CHF, a trial comparing NT-proBNP versus symptom-guided therapy in patients aged 60 to 74 and ≥75 years. LVEF, LV end diastolic volume index (LVEDVI) and end systolic volume index (LVESVI) were assessed. LVEF increased from 31.3 ± 10.7% to 39.1 ± 11.8% at 18 months (p < 0.001) in symptom-guided, and from 30.3 ± 11.7% to 44.0 ± 13.2% (p < 0.001) in NT-proBNP-guided patients. The increase in LVEF was significantly larger in the NT-proBNP-guided treatment group (p for interaction = 0.006), which was true for both age groups (p for interaction in both = 0.091). LVEDVI and LVESVI decreased without influence by study group allocation.

CONCLUSIONS
In elderly heart failure patients, intensified medical therapy leads to an improvement in LVEF and to reverse remodeling. NT-proBNP guided therapy was associated with a larger improvement in LVEF than symptom guided therapy both in patients aged 60 to 74 and ≥75 years.

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