N-Terminal Pro-B-Type Natriuretic Peptide-Guided Therapy in Chronic Heart Failure Reduces Repeated Hospitalizations-Results From TIME-CHF

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BACKGROUND
Although heart failure (HF) patients are known to experience repeated hospitalizations, most studies evaluated only time to first event. N-Terminal B-type natriuretic peptide (NT-proBNP)-guided therapy has not convincingly been shown to improve HF-specific outcomes, and effects on recurrent all-cause hospitalization are uncertain. Therefore, we investigated the effect of NT-proBNP-guided therapy on recurrent events in HF with the use of a time-between-events approach in a hypothesis-generating analysis.

METHODS AND RESULTS
The Trial of Intensified Versus Standard Medical Therapy in Elderly Patients With Congestive Heart Failure (TIME-CHF) randomized 499 HF patients, aged ≥60 years, left ventricular ejection fraction ≤45%, New York Heart Association functional class ≥I,I to NT-proBNP-guided versus symptom-guided therapy for 18 months, with further follow-up for 5.5 years. The effect of NT-proBNP-guided therapy on recurrent HF-related and all-cause hospitalizations and/or all-cause death was explored. One hundred four patients (49 NT-proBNP-guided, 55 symptom-guided) experienced 1 and 275 patients (133 NT-proBNP-guided, 142 symptom-guided) experienced ≥2 all-cause hospitalization events. Regarding HF hospitalization, 132 patients (57 NT-proBNP-guided, 75 symptom-guided) experienced 1 and 122 patients (57 NT-proBNP-guided, 65 symptom-guided) experienced ≥2 events. NT-proBNP-guided therapy was significant in preventing 2nd all-cause hospitalizations (hazard ratio [HR] 0.83; P = .01), in contrast to nonsignificant results in preventing 1st all-cause hospitalization events (HR 0.91; P = .35). This was not the case regarding HF hospitalization events (HR 0.85 [P = .14] vs HR 0.73 [P = .01]) The beneficial effect of NT-proBNP-guided therapy was seen only in patients aged <75 years, and not in those aged ≥75 years (interaction terms with P = .01 and P = .03 for all-cause hospitalization and HF hospitalization events, respectively).

CONCLUSION

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NT-proBNP-guided therapy reduces the risk of recurrent events in patients <75 years of age. This included all-cause hospitalization by mainly reducing later events, adding knowledge to the neutral effect on this end point when shown using time-to-first-event analysis only.

CLINICAL TRIAL REGISTRATION
isrctn.org, identifier: ISRCTN43596477.

type	journal paper/review (English)
date of publishing	13-02-2017
journal title	J Card Fail (23/5)
ISSN electronic	1532-8414
pages	382-389