

BNP and NT-proBNP in cardiovascular disease

Short summary

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Circulating brain type natriuretic peptides (BNP and NT-proBNP) are established biomarkers in all stages of heart failure (HF). However, there are several issues to be addressed concerning the use in HF management and the value of testing in the community.

Linssen and coworkers showed in a large Groninger population-based study (PREVEND) that plasma NT-proBNP was a strong and independent predictor of death and a wide range of cardiovascular events. In addition, the presence of LVH on ECG was only predictive in those with elevated NT-proBNP. The combined use of ECG and measurement of NT-proBNP might reduce the need for advanced investigations, such as echocardiography.

In stabilized HF patients who participated in the Dutch COACH study, both BNP and NT-proBNP levels at hospital discharge were equally strong and independent predictors of HF hospitalization and all-cause death during 18 months of follow-up. For a given BNP or NT-proBNP level, the outcome in patients with preserved LVEF was at least as high as in those with reduced LVEF. Furthermore, atrial fibrillation was an independent predictor of adverse outcome only in HF patients with preserved LVEF, in which few evidence-based therapies are available.

In an observational study in stable HF patients, a lower urinary excretion of NT-proBNP was measured in comparison to healthy subjects. These results were independent of glomerular filtration, but were associated with renal hypoperfusion; possibly as part of a protective mechanism.

New research initiatives, individualized applications of natriuretic peptides in cardiovascular disease and adherence to practice guidelines may improve clinical outcome.