Abstract: P3515
Gender differences in plasma levels and prognostic value of NT-proBNP in chronic heart failure

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Background: Natriuretic peptides are established biomarkers of heart failure (HF). The existence of gender-related differences in circulating levels and prognostic value are still controversial.

Methods: Individual patient data from studies assessing cardiac biomarkers (N-terminal fraction of pro-B-type natriuretic peptide - NT-proBNP - and high-sensitivity troponin T) for risk prediction in stable chronic HF were analysed.

Results: Women (n=1964, 23%) had higher median [interquartile interval] NT-proBNP concentrations than men (1678 [659–4215] vs. 1294 [522–2973] ng/L, p<0.001). Female gender predicted higher NT-proBNP independently from age, body mass index, glomerular filtration rate, left ventricular ejection fraction (LVEF), and atrial fibrillation. Over a 2.4-year follow-up (1.6–3.2), 2351 patients (27%) died, and cardiovascular death occurred in 1558/8271 (19%). HF hospitalization was recorded in 2088/7944 (26%) over 2.0 years (1.3–2.6). Women and men had similar areas under the curve for the 3 endpoints, with higher cut-offs among women: all-cause death, 2328 ng/L vs. 1319 ng/L; cardiovascular death, 2328 ng/L vs. 1413 ng/L; HF hospitalization, 1265 ng/L vs. 907 ng/L. In the prognostic model above, the risk of the three endpoints increased by 32%, 35%, and 17%, respectively, per doubling of NT-proBNP in women, and by 41%, 45%, and 30% in men.

Conclusions: Women with chronic HF display higher NT-proBNP levels than men in the whole population as well as across many patient subgroups. This difference is not entirely explained by heterogeneity in age, BMI, or renal function. NT-proBNP holds independent prognostic significance in both genders, although alternative prognostic cut-offs might be considered for women.
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