CHARACTERIZING THE “NON-RESPONDER” TO NT-PROBNP GUIDED HEART FAILURE TREATMENT: RESULTS FROM THE PROBNP OUTPATIENT TAILORED CHRONIC HEART FAILURE (PROTECT) STUDY

ACC Poster Contributions
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Background: In the course of heart failure (HF) therapy, some patients demonstrate significant reduction in NT-proBNP concentrations, while others do not. We sought to characterize the NT-proBNP “non-responder”.

Methods: In a prospective, randomized, single-center trial, over a mean of 10 months, 151 subjects with HF due to left ventricular systolic dysfunction received standard-of-care (SOC) HF management versus HF therapy with a goal to reduce NT-proBNP concentrations <1000 pg/mL. Those with an NT-proBNP >1000 pg/mL in either arm by study conclusion were termed “non-responders”.

Results: Non-responders were evenly balanced between SOC and NT-proBNP arms (53% vs 47%; P=.82). Baseline NT-proBNP values were higher in non-responders (2519 vs 1019 pg/mL; P <.001) and did not fall over the course of treatment, in contrast to responders (2497 vs 381 pg/mL; P <.001). Numerous differences between baseline characteristics were present between non-responders vs responders; in a multivariate logistic regression analysis, New York Heart Association Class III or IV symptoms (odds ratio [OR]=2.0; P=.05), history of ischemic HF (OR =1.9; P=.04), atrial fibrillation (OR=2.2; P=.05), glomerular filtration rate (OR per decile =0.81; P=.05), and baseline NT-proBNP (OR per 100 pg/ml=1.05; P =.001) independently predicted non-response. During treatment, non-responders had smaller relative dose changes (and greater dose reductions) of ACE inhibitors (median change -13% vs +40%; P =.001) or ARBs (median change -24% vs +3%; P =.001), while loop diuretic dose increases trended towards being significantly higher in non-responders (median change +29% vs +16%; P =.08). Following treatment, non-responders had less significant improvement in several echocardiographic parameters, such as ejection fraction, indices of remodeling or diastolic function, and pulmonary artery pressures (all P <.05). Lastly, non-responders had higher event rates (1.38 vs 0.46 cardiovascular events/subject; P =.001).

Conclusion: Patients not achieving an NT-proBNP <1000 pg/mL in the course of HF therapy have distinct characteristics from those that achieve this goal, and are at higher risk for adverse cardiovascular outcomes.