22831 | Urocortin-2 as a novel biomarker of patient outcomes in HFpEF: A prospective cohort study

Inês Vasconcelos[1,2]; Rui Adão[1,3,4]; Francisco Vasques-Nóvoa[1]; Adelino Leite-Moreira[1]; António S. Barros[1]; Carmen Brás-Silva[1,5]

Cardiovascular R&D Centre – UnIC@RISE, Department of Surgery and Physiology, Faculty of Medicine, University of Porto, Porto, Portugal[1]; School of Medicine, University of Minho, Braga, Portugal[2]; Department of Pharmacology and Toxicology, School of Medicine, Universidad Complutense de Madrid, Madrid, Spain[3]; CIBER Enfermedades Respiratorias (Ciberes), Madrid, Spain[4]; Faculty of Nutrition and Food Sciences, University of Porto, Porto, Portugal[5]

Background & Aim: With an increased understanding of the pathophysiology of heart failure (HF), numerous molecules have emerged as potential diagnostic and prognostic biomarkers. While circulating urocortin levels are typically low in healthy individuals, serum urocortin-2 (UCN2) levels are elevated in HF patients with reduced ejection fraction, as well as in those with hypertension, and are positively correlated with left ventricular hypertrophy. These findings suggest that serum UCN2 concentration may serve as a valuable biomarker in heart failure with preserved ejection fraction (HFpEF). The study aims to investigate whether circulating UCN2 levels provide additional prognostic value compared to brain natriuretic peptide (BNP) in HFpEF patients. **Methods:** UCN2 serum levels were analyzed using an enzyme-linked immunosorbent assay in 86 serum samples from patients with chronic HFpEF from a prospective cohort study (NETDiamond). A Cox proportional hazards model was used for the comparison between BNP and BNP+UCN2 in the prediction of cardiovascular death or HF hospitalization. **Results:** BNP was found to be a significant predictor (HR=1.57, p=0.002) of increased risk of cardiovascular death or HF hospitalization. In a second model, adjusted for BNP, age and sex, UCN2 was found to be independently significant (HR=1.54, p=0.028) for patient outcome prediction. The inclusion of UCN2 in an outcome prediction model resulted in improved log-likelihood and AIC/BIC values, providing better statistical fit. Despite the statistical significance of adding UCN2 to a BNP model, the decision curve analysis suggests that the addition may not translate to meaningful clinical utility. **Conclusions:** In patients with HFpEF, it was observed that UCN2 provides statistically significant improvement in outcome prediction model fit, contributing prognostic information that's independent of BNP, age and sex. Although it offers some statistical predictive value, its impact on clinical decision-making may be limited.

Keywords: Heart Failure, Biomarkers, Urocortin.

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