VALIDITY OF A NOVEL AUTOMATED ASSAY FOR GALECTIN-3 TESTING IN PATIENTS WITH REDUCED EJECTION FRACTION

Poster Contributions
Hall C
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Background: Circulating levels of Galectin-3 (Gal-3), a marker of cardiac fibrosis and remodelling, contribute to the risk stratification of patients with heart failure (HF). Our objectives were to determine the analytical and clinical validity of a novel automated Gal-3 assay in HF patients with reduced ejection fraction (EF).

Methods: Gal-3 levels were measured in 137 HF patients (females n=33; males n=104; NYHA II-IV; mean age: 67 years; etiology: ischemic n=94, dilated cardiopathy n=43; mean EF: 23 %) with the VIDAS-automated immunoassay (bioMérieux) as well as with the reference ELISA assay (BG Medicine). Levels of B-type natriuretic peptide (BNP) and N-terminal proBNP (NT-proBNP) were also measured.

Results: Median of Gal-3 was 15.6 ng/mL (range: 5.7 - 49.2) with the VIDAS-assay and 17.6 ng/mL (range: 8.1 - 43.9) with the ELISA assay. Both methods were positively and significantly correlated (r = 0.90, p<0.001). Levels of VIDAS-Gal-3 were related to NYHA functional classes (p<0.001) and mean Gal-3 levels were 13.8 ng/mL in NYHA II patients, 17.7 ng/mL in NYHA III and 19.6 ng/mL in NYHA IV. VIDAS-Gal-3 levels were positively correlated to BNP (r=0.26, p=0.002) and NT-proBNP (r=0.41, p<0.001). Over a long-term follow-up (8 years), baseline VIDAS-Gal-3 levels higher than the median allowed to identify HF patients with very early risk of cardiovascular death (Hazard Ratio: 2.12; 95% CI, 1.37-2.56; p<0.01). Furthermore, in multimarker strategies VIDAS-Gal-3 was additive to both BNP and NT-proBNP (90% of the patients with both Gal-3 and BNP higher than median died (n=41) in contrast to 62% of patients with only one increased biomarker (n=56); and 88% of the patients with both Gal-3 and NT-proBNP higher than median died (n=42) in contrast to 63% of patients with only one increased biomarker (n=54).

Conclusion: We showed an excellent agreement between the VIDAS-Gal-3 automated assay and the reference method, supporting the analytical validity of the automated assay. Our results also indicated that Gal-3 levels measured with the VIDAS-assay were not only predictive of long-term CV death in patients with reduced EF but also provide added value to BNP and NT-proBNP testing.