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Impact of secondary tricuspid regurgitation on survival in heart failure - insights from COMMIT-HF registry

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Background: Functional tricuspid regurgitation (fTR) is common in left sided heart disease, especially in patients with concomitant left-sided valvular diseases and can lead to functional impairment and reduced survival. However, the impact of fTR on survival in chronic heart failure with reduced left ventricular ejection fraction (HFrEF) without severe left valvular diseases (LVD) is not fully established. The aim of the present study was to observe if moderate to severe fTR may influence the survival in patients with HFrEF without severe LVD.

Methods: We have analyzed a large single-center registry (n=2731) of HFrEF patients treated in a large-volume cardiovascular center between 2009–2015. After exclusion of patients with severe aortic and mitral valve disease we have included 2435 patients with HFrEF (left ventricular ejection fraction (LVEF) ≤35%). Functional moderate to severe tricuspid regurgitation without severe left valvular diseases was present in 465 patients. Twelve-month vital status was available for the whole patient population.

Univariate and multivariate Cox proportional hazard regression models were performed to evaluate the relationship between moderate to severe fTR and mortality in the study group.

Results: Comparison of clinical data of fTR and non-fTR in HFrEF patients revealed some significant differences (age 63.3±12.9 vs 61.3±12.4, p=0.002; female sex 25.8% vs 17.9%, p<0.001; chronic kidney disease stage III-V 45.3 vs 26.6%, p=0.001; atrial fibrillation 52.4% vs 28.5%, p<0.001). Twelve-month all-cause mortality was over 2-fold higher in the fTR group (21.2% vs 8.1%, p<0.001). There were no significant differences with regard to the medical treatment, implantable defibrillator or cardiac resynchronization therapy. The presence of fTR was identified as an independent echocardiographic factor impaired 12-month all-cause survival (HR 1.59, CI 1.2- 2.09, p<0.001, figure 1)

Conclusion: Apart from the LVEF, the presence of moderate to severe fTR may predict 12-month all-cause mortality in patients with HFrEF.

