Prognostic value of change in nutritional status after transcatheter aortic valve replacement

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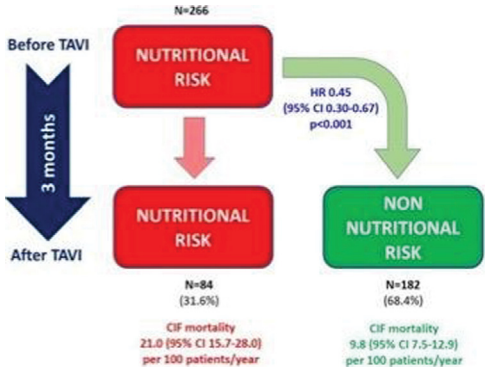
Funding Acknowledgement: Type of funding source: None

Introduction and purpose: Risk of malnutrition is a frequent condition among patients undergoing transcatheter aortic valve replacement (TAVR). Nutritional status assessed by nutritional risk index (NRI) is independently associated with an increased risk of death during long-term follow-up in these patients. The aim of the study is to determine the prognostic impact of the variation in nutritional risk after TAVR.

Methods: TAVR patients were included in an observational and prospective study between 2008–2019. Baseline and 3-months post-TAVR NRI were calculated as 1.519 x albumin (g/L) + 41.7 x (real weight [kg]/ideal weight [kg]). According to this parameter, the risk of malnutrition was severe (NRI$<$83.5), moderate (83.5$\geq$NRI$<$97.5) and mild (97.5$\geq$NRI$<$100). We analyzed the change in nutritional status after TAVR and the association between nutritional status variation and the clinical outcomes: all-cause mortality, heart failure hospitalization and the composite of all-cause death and/or heart failure hospitalization at 3 years follow-up using the Cox proportional hazards model.

Results: 433 patients were included. 68.4% of patients with baseline nutritional risk had no nutritional risk after TAVR. The prevalence of risk of malnutrition was reduced to 25.2% after TAVR. During the follow-up (2.7±2.0 years), 157 (36.3%) patients died and 172 patients (39.7%) had heart failure hospitalization. Patients who remained at nutritional risk after TAVR had a higher risk of mortality (HR: 2.10 [95% CI: 1.30 to 3.39], p=0.002), heart failure hospitalization (HR: 1.97 [95% CI: 1.26 to 3.06], p=0.000) and the composite outcome (HR: 2.0 [95% CI: 1.37 to 2.91], p$<$0.001).

Conclusions: Risk of malnutrition was a frequent condition among TAVR patients, but most patients improved their nutritional status after the procedure. The change in nutritional status is associated with prognosis: post-TAVR nutritional risk improvement is associated with reduced heart failure hospitalization, and the change to non-nutritional risk after TAVR halved the risk of mortality and heart failure hospitalization during long-term follow-up. Persistent nutritional risk after TAVR was related to poor prognosis. Further studies are needed to identify whether at nutritional risk would benefit from nutritional intervention during processes of care of TAVR programs.



Change in NRI and prognostic value