Abstract: P3723

Impact of frailty status on 30-day mortality in patients with valvular heart disease undergoing percutaneous transcatheter valve interventions

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Topic(s):
Aortic Valve Intervention

Citation:

Background:
Transcatheter strategies to treat valvular heart disease (VHD) are an established therapeutic option in elderly patients, not suitable for open heart surgery. The current ESC guidelines recommend the STS score and EuroSCORE II as tools for risk stratification. However, these surgical risk score do not consider important risk factors such as frailty, cognitive and nutritional status of the patients.

Aims:
The aim of this study was to assess the frailty status in patients with severe VHD evaluated for transcatheter treatment strategies and to investigate the impact on mortality of these patients.

Methods and Results:
Our study cohort consisted of 456 consecutive patients (mean age 79±7.9 years, median STS-score 3.15 and EuroSCORE II 3.65) who were evaluated for percutaneous treatment of severe aortic valve stenosis (n=311), mitral valve regurgitation (n=100), and tricuspid valve regurgitation (n=45) in 2018. The frailty status in these patients was assessed using the Katz Index of Independence in Activities of Daily Living, the Lawton Instrumental Activities of Daily Living Scale, the five times chair rise, and the Score for assessment of frailty phenotype. The Mini Nutritional Assessment (MNA) and the Controlling Nutritional Status score were used for the assessment of the nutritional status of the cohort.

Assessment by the score for frailty phenotype showed that 220 (48.2%) cases were considered frail, 200 (37.3%) cases as prefrail, and only 36 (6.7%) patients considered robust. Regarding the MNA, 212 (46.5%) patients were at normal nutritional status, whereas 207 (45.4%) patients were at risk for malnutrition, and 37 (8.1%) patients were already malnourished.

The overall 30-day mortality rate was 3.1% (n=14). Multivariate analysis showed a significant association of 30-day mortality with baseline serum creatinine (1.2 mg/dl [IQR:0.9-1.5 mg/dl] for survivors vs 1.6 mg/dl [IQR: 1.4-2.2 mg/dl] for non-survivors, p=0.14), high-sensitive cardiac troponin T (24.3 ng/l [IQR:16.0-42.6 ng/l] for survivors vs 55.6 ng/l [IQR: 40.4-84.7 ng/l] for non-survivors, p=0.002), and the five chair rise test (p=0.005). Interestingly, there was no significant correlation of nutrition scores and frailty tests with 30-day mortality except for the five chair rise test. Linear regression analysis showed serum creatinine (p=0.04; OR: 1.4, CI: 1.0-1.8) and the five chair rise test (p=0.03; OR: 0.7, CI: 0.5-1) as independent predictors of the mortality.

Conclusion:
A comprehensive assessment of the clinical patient condition including frailty status is thought to be crucial for risk stratification and the decision-making process which treatment option a specific patient should undergo. However, in our study only the five chair rise test was found to be an independent predictor of 30-day mortality in patients with VHD undergoing percutaneous therapeutic options and seems to be an easy-to-assess test to
assess the mortality risk of a specific patient.