

P5983

Pre-operative physical performance as an independent predictor of in-hospital outcomes in older patients undergoing elective cardiac surgery

A. Pratesi¹, S. Baldasseroni², P. Stefano³, S. Del Pace⁴, V. Campagnolo⁵, A.C. Baroncini¹, A. Lo Forte¹, E. Carrassi⁶, C. Ghiara¹, G. Lucarelli¹, A.J. Marella², F. Orso², A. Ungar¹, N. Marchionni¹, M. Di Bari¹

¹Careggi University Hospital (AOUC), Department of Experimental and Clinical Medicine, Florence, Italy; ²Careggi University Hospital (AOUC), Unit of Geriatrics, Department of Medicine and Geriatrics, Florence, Italy; ³Careggi University Hospital (AOUC), Cardiac Surgery Unit, Cardio-Thoracic-Vascular Department, Florence, Italy; ⁴Careggi University Hospital (AOUC), General Cardiology, Cardio-Thoracic-Vascular Department, Florence, Italy; ⁵Careggi University Hospital (AOUC), Cardiac Anesthesiology Unit, Cardio-Thoracic-Vascular Department, Florence, Italy; ⁶University of Florence, Florence, Italy

Introduction: Risk stratification of patients candidate to cardiac surgery is usually based on the Society of Thoracic Surgeons (STS) score or on the Euroscore II. However, these risk scores has limited predictive value in elderly patients.

Purpose: We conducted a study to determine whether the Short Physical Performance Battery (SPPB), a tool assessing physical performance, predicts hospital death and major morbidity, beyond STS risk score. The outcome was a composite end-point as defined by STS Major Morbidity or Operative Mortality (STS-MM) in STS Risk Model Outcomes: operative mortality, stroke, renal failure, prolonged mechanical ventilation, deep sternal wound infection, and reoperation.

Methods: In this prospective, single-center, cohort, hospital-based study, conducted at Careggi University Hospital, Florence, Italy, all patients aged 75+ years referred for an elective coronary aortic by-pass grafting, valvular surgery or combined cardiac surgery were evaluated pre-operatively. Assessment included SPPB, cognitive and functional status and evaluation of comorbidity. Patients receiving emergency/urgent cardiac surgery or a procedure not considered in the STS risk score calculator, who reported previous cardiac surgery or were clinically unstable were excluded. Participants were classified according to the STS-Predicted Risk Of Mortality (STS-PROM) as at low (<4%), intermediate (4 to 8%) or high risk (>8%).

Results: Out of 250 participants (females: 48.4%; mean age: 79.9 years),

148 (59.2%) were at low, 73 (29.2%) at intermediate and 29 (11.6%) at high risk, based on the STS-PROM. Mean±SEM SPPB score was 8.8±0.2, 7.1±0.4 and 6.0±0.7 in participants at low, intermediate, and high risk, respectively (p<0.001). The outcome occurred in 67 subjects (26.8%). SPPB score predicted the outcome in the entire study sample, controlling for STS-MM score, CKD, and anaemia (adjusted OR: 0.89, 95% CI 0.81–0.98 per each point increase; p 0.017). When analyses were repeated separately in participants with STS-PROM indicative of low (<4%) and in those at medium-high risk, the predictive value of SPPB was enhanced in the formers (adjusted OR 0.73, 95% CI 0.62–0.86 per each point increase; p<0.001- controlling for STS score), whereas was lost in the latter. An alternative model was subsequently tested, where STS score was not included and peripheral artery disease and creatinine (variables contributing to the STS score) were individually entered: SPPB was confirmed as a significant predictor also in this model, controlling for anaemia, peripheral artery disease, and creatinine. The corresponding AUC was 0.813 (Figure 1).

Conclusions: SPPB predicts mortality and major morbidity in older patients undergoing elective cardiac surgery, in particular in those classified as low-risk with the STS risk score. Use of SPPB should therefore be recommended to improve preoperative risk stratification of older patients.

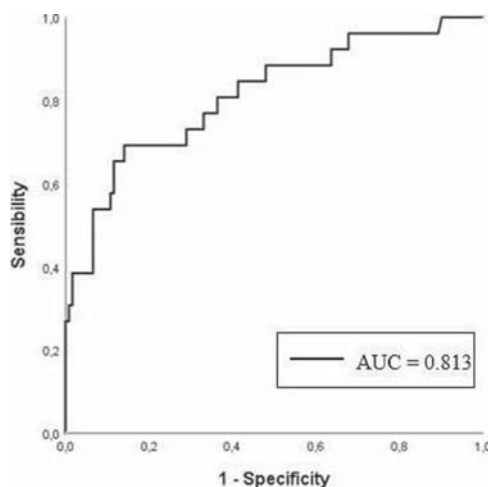


Figure 1