

Supplemental Material

Data S1.

Supplemental Methods

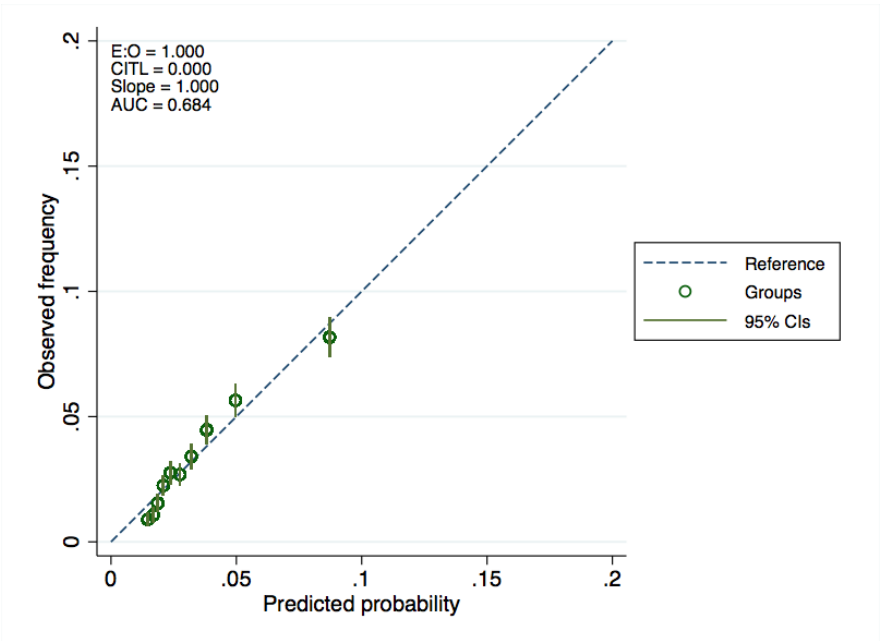
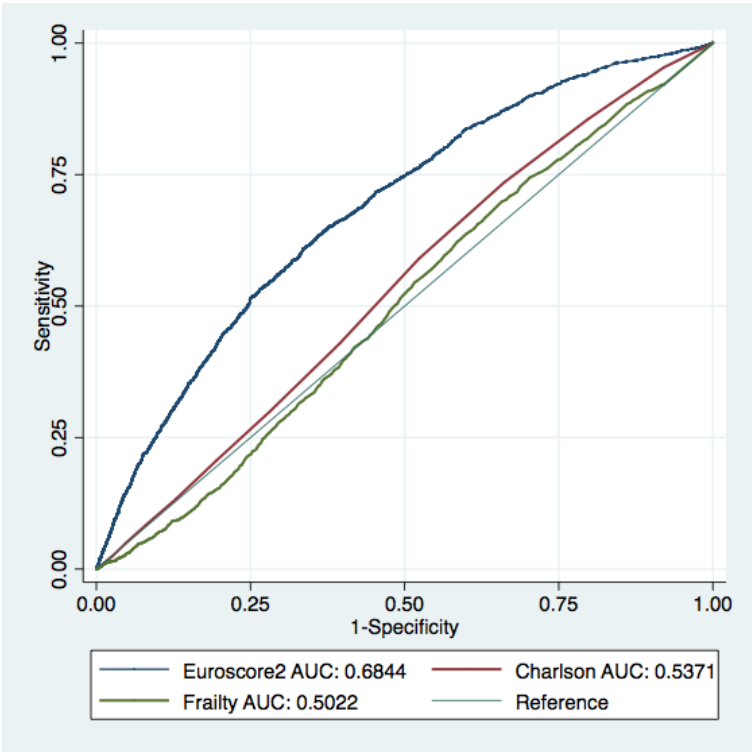
Estimated EuroSCORE II

For each patient, the EuroSCORE II was estimated using the formulas available at the EuroSCORE website (www.euroscore.org) (19, 20).

Age, sex, extracardiac arteriopathy, poor mobility, previous cardiac surgery, chronic lung disease, active endocarditis, diabetes on insulin, recent MI are items available in the PMSI database using the ICD-10 or CCAM codes. For renal impairment, dialysis regardless of creatine clearance (CC) is an available item in the database and patients with history of abnormal renal function were considered as having CC <50 ml/min. NYHA class was considered to be at least II in these patients with severe aortic stenosis needing intervention, III in case of previous hospitalization with heart failure, and IV in case of history of pulmonary oedema. None of the patients were considered as having CCS class 4 angina (angina at rest). Patients with history of cardiomyopathy (whether ischemic or non-ischemic) were considered as having poor LVEF. Pulmonary hypertension was considered moderate in patients with previous hospitalization with heart failure and severe in case of history of pulmonary oedema. The item 'critical preoperative state' was considered present for patients with recent ventricular tachycardia, ventricular fibrillation, aborted cardiac arrest or acute renal failure. Patients with pulmonary oedema cardiogenic shock were considered as needing urgent intervention and those with cardiac arrest as needing emergency intervention. All patients were considered as having single non-CABG for weight of the intervention and no surgery on thoracic aorta.

In the full cohort of patients with TAVR, mean estimated EuroSCORE II was 3.7 ± 1.0 while all-cause death at day 30 was 3.3%. The area under the curve (AUC) of the estimated EuroSCORE II for predicting the risk of all-cause death at day 30 was 0.684 (95%CI 0.672-0.697). This score outperformed Charlson comorbidity index (AUC 0.537, 95%CI 0.524-0.550, $p < 0.0001$ for DeLong test) and frailty index (AUC 0.502, 95%CI 0.489-0.516, $p < 0.0001$ for DeLong test) for identifying the risk of all-cause death at day 30 (Figure S1). The observed versus predicted risks of all-cause death at day 30 post-TAVR within risk deciles are shown in Figure S1.

Figure S1. Top panel: Receiver operating curves of the derivation model for the estimated EuroSCORE II, Charlson comorbidity index and frailty index for identifying death at day 30 after intervention. Lower panel: Calibration plots of the estimated EuroSCORE II for the overall cohort.



The diagonal line represents perfect calibration. Calibration of the futility prediction score is satisfying across the 10 deciles and a predicted 30-day mortality rate of approximately 10%. Vertical bars represent 95% CIs.