

Predicting poor short- and medium-term survival after transcatheter aortic valve implantation: a single UK centre experience

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Introduction

Transcatheter aortic valve implantation (TAVI) for severe, symptomatic aortic stenosis improves quality of life and survival in most patients. It is, however, important to identify patients who are unlikely to get these benefits from TAVI so that futile treatment can be avoided. Futility in this context can be regarded as lack of functional improvement or death within the first 2 years after the procedure.¹ The FRANCE-2 multiparametric risk score was previously developed to predict mortality after TAVI and comprises nine pre-procedural factors integrated into a 21-point scoring system.² The FRANCE-2 score was originally validated against early (up to 30 days) mortality after TAVI but its value in anticipating longer term outcomes is uncertain.

Aims

The aims of this study were to determine whether the FRANCE-2 scoring system is of value in determining medium- as well as short-term survival in patients undergoing TAVI in a single UK centre, and to compare its relative merits in this regard with the logistic EuroSCORE.

Methods

A cohort of 187 consecutive patients undergoing TAVI in a single UK centre were studied. Baseline clinical data were collected from the UK Central Cardiac Audit Database (CCAD) and patient records. Mortality tracking was achieved in 100% of patients. FRANCE-2 risk scores were calculated retrospectively and c-statistics were applied to determine the discriminative power of the FRANCE-2 score and the logistic EuroSCORE in associating with mortality. Using the FRANCE-2 scores, the patients were divided into low-risk (score 0), moderate-risk (score 1–5) and high-risk (score >5) groups and the survival outcomes were compared.

Results

Of the 187 patients, 57.2% were male and the mean age was 80.9±6.9 years. Survival rates after TAVI at 30 days, 1- and

Table 1. Patient parameters contributing to FRANCE-2 score

Patient parameters	Values
Age ≥90 years	7.0% (n=13)
BMI <18.5	1.6% (n=3)
New York Heart Association Class IV	7.5% (n=14)
Acute pulmonary oedema ≥2 in past year	6.4% (n=12)
Systolic pulmonary artery pressure ≥60 mmHg	5.9% (n=11)
Critical preoperative state	4.3% (n=8)
Respiratory insufficiency	43.9% (n=82)
Dialysis	1.1% (n=2)
Delivery approach other than transfemoral or subclavian route	0% (n=0)

BMI = body mass index

2-years were 95.7% (n=179), 88.2% (n=165) and 77.5% (n=145), respectively. The frequency of high-risk parameters in this cohort of patients that contributed to the FRANCE-2 scores is shown in Table 1. The median score was 2 and the highest score was 9. The c-index of FRANCE-2 score for predicting 30-day mortality was 0.793 (p=0.009) and for 1-year mortality was 0.679 (p=0.016). The mean survival time for patients with high FRANCE-2 scores (18.6 months) was significantly less than for patients with low (53.8 months) and moderate (53.6 months) scores (p=0.0004). The logistic EuroSCORE was poorly associated with mortality with a c-index of 0.605 (p=0.346) and 0.616 (p=0.11) for 30-day and 1-year mortality respectively.

Conclusions

The FRANCE-2 risk score is predictive of medium-term as well as short-term survival after TAVI in a single UK centre clinical practice. The logistic EuroSCORE is a poor predictor of short- and medium-term survival after TAVI. The presence of a high FRANCE-2 score (>5) is associated with poor survival after TAVI. The use of the FRANCE-2 scoring system may be a useful additional tool for the heart multidisciplinary team (MDT) in identifying patients who will benefit least from TAVI. ■

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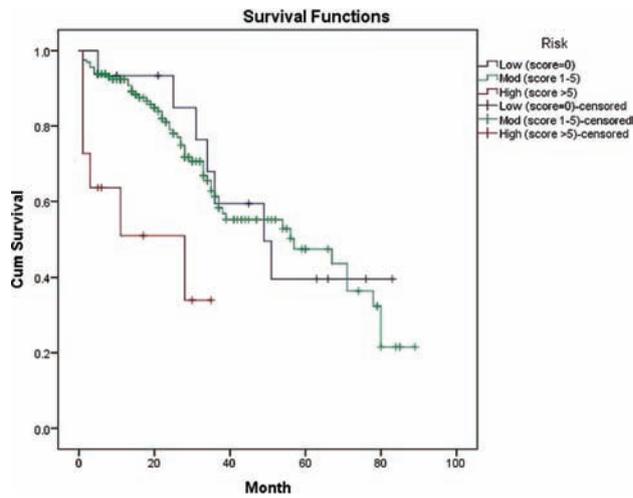


Fig 1. Survival functions

Conflict of interest statement

None declared.

References

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