Optimising patient discharge management after transfemoral transcatheter aortic valve implantation: the multicentre European FAST-TAVI trial

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Period of study Patient enrolment: May 2015 – October 2017

Objectives

- To investigate the optimisation of length of stay post-transcatheter aortic valve implantation (TAVI) by defining a standardised set of risk criteria that allows a safe and timely discharge of TAVI patients, to validate their appropriateness prospectively in different centres and multiple European countries, and to assess post-discharge outcomes
- Primary endpoint/objective: To determine incidence of a composite of all-cause mortality, vascular access-related complications, permanent pacemaker implantation, stroke, re-hospitalisation due to cardiac reason, kidney failure and major bleeding, occurring during the first 30 days after hospital discharge
- Secondary objective: To prospectively test a set of pre-specified risk criteria for out-of-hospital complications after early discharge (less than or equal to 72h) post-procedure

Study design

The FAST-TAVI registry is an observational, prospective, multi-centre project.

Materials and methods

- 502 unselected patients were enrolled at 10 sites in three countries (Italy, Netherlands and UK), of whom 499 (mean age 81.4y) underwent TAVI. 496 were discharged alive and 30-day follow-up was available in 468
- The investigators validated a set of discharge criteria that would predict timely and safe discharge properly after the intervention in a prospective, European, multi-centre registry

Key results

- The primary endpoint was reached in 12.9% of patients
- The overall 30-day mortality was 1.1%, the rate of stroke/transient ischaemic attack 1.7%, the rate of permanent pacemaker implantation 7.3%, the rate of major vascular complications 1.9%, the rate of major bleeding 2.4% and the rate of cardiac re-hospitalisation 3.7%
- The median length of stay was 2 days, with 72.6% discharged within 72h
- Patients discharged early because of a perceived low risk of complications had a significantly lower risk of the primary endpoint (7.0 vs 26.4%), and no significant increase in the rate of out-of-hospital adverse events was noted

Limitations of study

- Inclusion was restricted to patients undergoing transfemoral (TF) TAVI using the Edwards SAPIEN 3 valve, and it is known that different valves are associated with differing pacemaker rates (one of the key early discharge criteria)
- Participating centres were recruiting patients over a prolonged period, which may have resulted in a loss of consecutiveness
- Data completeness was not available for every variable, although the key variables pertaining to this paper were available in >90% of patients

Conclusions

- A pre-defined set of risk criteria was able to guide discharge decisions appropriately for patients undergoing TF-TAVI with SAPIEN 3 valve in multiple centres in Europe
- >70% of patients undergoing TF-TAVI can be safely discharged within 72h post intervention using this set of risk criteria
- The rate of 30-day complications did not reveal any risk increase with this strategy compared with outcomes in major TAVI trials and registries
- Optimising length of stay is advantageous for patients and reduces procedure-related and resource utilisation costs as well as other risks associated with prolonged hospitalisation