

EuroPCR highlights

Part 2: Optimising the TAVI procedure

18-20 May 2021

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This year, the annual meeting of EuroPCR was held as a 3-day digital event, supplemented with on-demand content. EuroPCR historically covers a diverse range of topics in interventional cardiovascular medicine.

There were many sessions dedicated to the evolving changes of transcatheter aortic valve implantation (TAVI). This second part of the report details conference highlights on optimising the TAVI procedure with a focus on pathway optimisation, early discharge, and the importance of the TAVI coordinator.

“Expectation in 2021:
Getting it right, for every
patient, at every touch
point, every time”

Sandra Lauck

EuroPCR: relevant sessions attended

Session type	Session title	Speakers
Livestream	TAVI: contemporary indications and techniques	Didier Tchetché Hendrik Treede Lars Sondergaard Helene Eltchaninoff
On-demand	Re-framing optimal implantation of the SAPIEN 3 valve in TAVI	Jonathan Mailey
Poster: POS341	Predictors of early discharge after transcatheter aortic valve replacement	Marco Angelillis, et al.

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Objectives of TAVI optimisation

Dr Derk Frank, Dr Francesco Saia, and Dr Sandra Lauck outlined why optimising the TAVI procedure is needed, including new challenges presented with COVID-19, increased TAVI workload with an all-risk indication, and untreated patients. As the world emerges from the pandemic, optimising resources and increasing hospital capacity will become the biggest challenges according to Dr Francesco Saia. While Dr Sandra Lauck believes that the goals in contemporary TAVI should include a predictable patient trajectory of care, excellent patient outcomes and efficient and scalable processes of care.

TAVI pathway optimisation

Since the first TAVI procedure in 2002,¹ it has been simplified, and contemporary TAVI is based on a minimalist pathway with maximum safety, leading to improved patient outcomes.²⁻⁴

With TAVI expanding into the low-risk patient cohort, the population available to undergo TAVI is growing. For many organisations, this will require optimisation of the procedure pathway to accommodate the increasing number needed to be treated. There is a need to streamline patient management to treat more patients without compromising patient safety.

In Dr Francesco Saia's experience, protocols help to prepare the patient before they arrive at the hospital. These protocols allow for safe transfer to the ward and a continuity of care. The use of protocols allows for standardisation and there exists protocols for every step along the patient's trajectory of care: from entry to discharge. Deviation from the pathway should be limited and discussed with the heart team.

Key features of minimalist TAVI

- Use of protocols and standardisation of processes
- Transfemoral access
- Local anaesthesia
- Minimally invasive
- No ICU admission > admit direct to ward
- Immediate removal of pacing

“Minimalist TAVI is maximal planning”

Francesco Saia

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Early discharge

Dr Sandra Lauck, Dr Francesco Saia and Dr Olivier Darremont discussed how early discharge contributes to optimisation of the TAVI procedure, conserving resources and delivering improved patient outcomes. With an expected backlog of care and delays to treatment as the pandemic abates, reducing the length of stay is mandatory to increase capacity and allow the possibility of treating more patients. Fast-track 24h protocols make use of risk criteria for early discharge to limit unexpected complications. Early mobilisation post-procedure contributes to early discharge, and the MobiTAVI⁵ trial has demonstrated the feasibility, safety and efficacy of early discharge, with early mobilisation, conferring additional organisational and patient benefits.

Dr Marco Angelillis, et al. presented a poster on the predictors of early discharge in TAVI. Patients were categorised as either fast track (<3 days) or slow track (>3 days) based on length of stay. Patients whose length of stay was >3 days were analysed for possible predictors of increased length of stay, including procedural complications or clinical and electrographic characteristics. New onset or worsening of conduction disturbances and major or life-threatening bleeding were independently associated with increased length of stay (>3 days). Therefore, it was concluded that only patients with bleeding complications or major conduction disturbance should be monitored >48h. Early discharge of <3 days did not adversely affect 30-day safety patient outcomes.

With TAVI moving into the low-risk patient indications, empirical evidence shows 80% of patients early discharged (<3 days) to home, and that early discharge is both feasible and safe across all-risk patients; however, the goal should not be day-1 discharge but rather early discharge based on patient status, according to Prof. Helene Eltchaninoff.

The MobiTAVI trial⁵

- Immobilisation post-TAVI may prevent post-operative complications such as delirium and infection
- Early ambulation after transfemoral TAVI was investigated
- 150 patients from 2016 to 2018 were prospectively assessed
- Time to mobilisation in the early group was 4h49 ± 31 min vs in the regular group 20h7 ± 3h6
- No major vascular complications occurred and minor complications were similar
- Numerically lower incidence for all outcomes were reported in the early group
- Early ambulation 4-6h post-TAVI is feasible and safe
 - Early ambulation decreases the combined incidence of delirium, infections, pain and unplanned catheter use

Role of the TAVI coordinator

Dr Sandra Lauck and Dr Derk Frank engaged in discussions on the importance of the TAVI coordinator. This role is pivotal in ensuring that healthcare professionals are aligned on the objectives of care, and it has been described as the cornerstone for a successful TAVI program. The TAVI coordinator is responsible for the coordination of all relevant parties to achieve improved patient outcomes, which provides a seamless continuation of care.

The pivotal responsibilities of a TAVI coordinator include leading the program, facilitating patient-focused processes and improving communication. Dr Derk Frank emphasised the importance of the TAVI coordinator by highlighting how the immediate impact can be measured when their TAVI coordinator is on annual leave: in these instances, the mean length of stay increases by 1 day. He described that it is ideal to have 1 coordinator per 100 TAVI procedures performed/year.

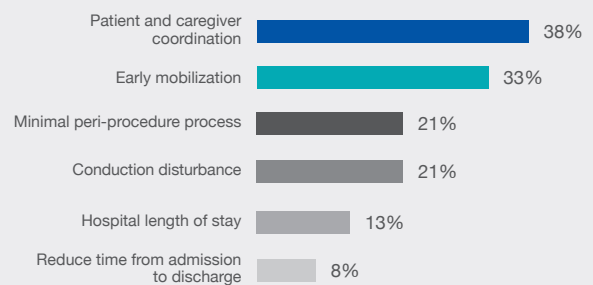
Looking ahead

As the world emerges from the pandemic into a ‘new normal’, there will be an expectation of improved organisational efficiencies to get through a backlog of care: TAVI is a procedure that is minimally invasive and whose pathway has been optimised and streamlined to deliver excellent patient outcomes and confer organisational benefits.

“Role of the TAVI coordinator has become an essential indicator of TAVI programs across multiple regions”

Sandra Lauck

Which element of the in-hospital pathway would you change first?



Responsibilities of the TAVI coordinator

- Coordinates the program
- Facilitates patient-focused processes of care
- Fosters communication among heart team members
- Provides expertise in cardiovascular and geriatric care
- Clinical assessment skills
- Patient, family and staff education

References

1. Cribier A, et al. Percutaneous transcatheter implantation of an aortic valve prosthesis for calcific aortic stenosis: first human case description. *Circulation* 2002;106:3006–3008.
2. Lauck SB, et al. Vancouver Transcatheter Aortic Valve Replacement Clinical Pathway. Minimalist Approach, Standardised Care, and Discharge Criteria to Reduce Length of Stay. *Circ Cardiovasc Qual Outcomes* 2016;9:312–21.
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4. Barbanti M, et al. Optimising patient discharge management after transfemoral transcatheter aortic valve implantation: the multicentre European FAST-TAVI trial. *Euro Intervention* 2019;15:147–54
5. Vendrik J, et al. Early mobilisation after transfemoral transcatheter aortic valve implantation: results of the MobiTAVI trial. *Neth Heart J* 2020;28:240–8.

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