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SEVERE SYMPTOMATIC AORTIC STENOSIS: WHICH OPTION FOR THE INTERMEDIATE RISK-PATIENTS?

TAVI Expert connect meeting

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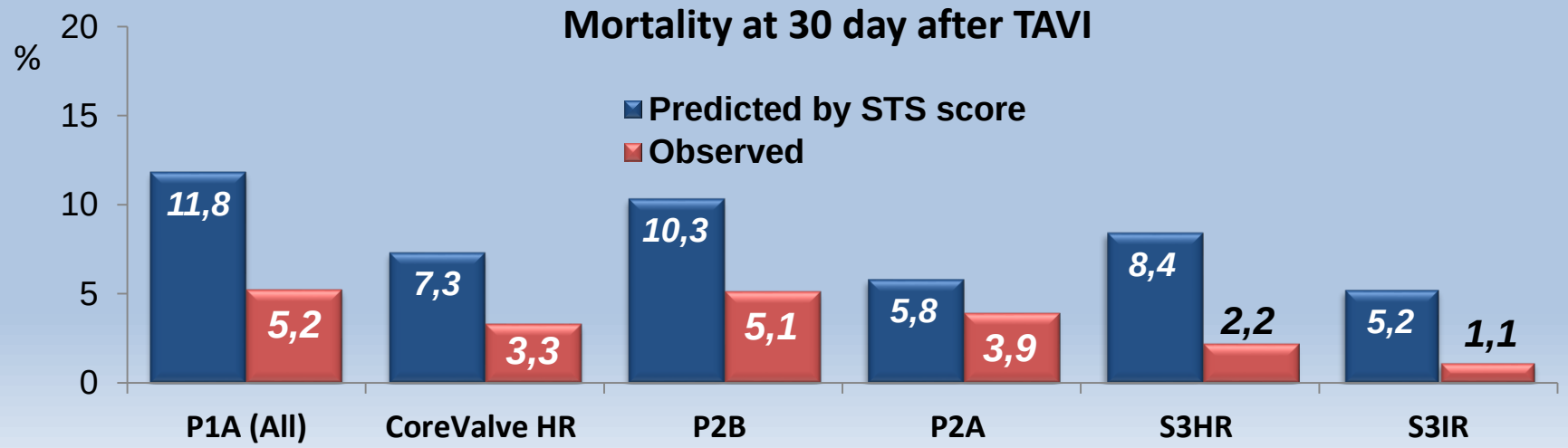
Assessing the risk of TAVI

The **STS score** was designed to assess the mortality risk of patients undergoing surgical aortic valve replacement (AVR). Created by the Society of Thoracic Surgeons, the score was not intended to calculate the risk of transcatheter aortic valve implantation (TAVI).

Clinical data have shown that the STS score is a reliable predictor of 30-day mortality for an isolated surgical AVR. It is, however, not appropriate for assessing the operative risk of TAVI – here the score predicts a mortality rate that is on average almost twice the rate that has been observed in clinical practice.



Pilgrim et al, *JACC* 2015

Assessing the risk of TAVI

A **TAVI-specific risk score** would be desirable for a number of reasons.

First, most trials use the STS score but its parameters change every three years, making it a challenge to compare outcomes over time and between studies.
Second, in the past, the STS score identified patients who could undergo surgery, which was the only available treatment. Today patients have the option of surgical AVR or TAVI and there is now a need to estimate the mortality risk of TAVI.
Finally, in the near future, TAVI will be the preferred therapy and the question *"Why should we perform TAVI instead of surgery?"*, will become *"Why should we perform surgery instead of TAVI?"*.

TAVI-specific risk elements to consider, when younger or at lower risk patients are going to be treated, are: anatomical information on the height of the coronary ostia, the presence of bicuspid valve, the presence and localization of calcification, and angulation/dilatation of the ascending aorta. These are important considerations in the decision to treat patients with a transcatheter, rather than conventional surgical, approach. A systematic evaluation of frailty should also be included.

Identifying TAVI candidates

Panel members described the number and type of patients currently evaluated by the heart team (HT) in their center.

In **Padua**, there is full collaboration with the cardiac surgery unit and all patients are evaluated by the HT. Over the years, the patient population eligible for TAVI has changed.
Initially, 55% of TAVI candidates were considered *"prohibitive/inoperable"* and *"high risk"*, but now most patients are at *"intermediate"* or *"lower risk"*. An age-related cutoff point (over 75 years) is generally used to identify patients eligible for TAVI.

In **Bergamo**, most of patients now over 75 years of age are enrolled for TAVI. However budget constraints remain the main problem – the department can afford a specific number of TAVI procedures and once the threshold is reached patients are referred to other hospitals.

Identifying TAVI candidates

In **Bologna**, around half of patients are evaluated by the HT. Age over 75 years is not used as a cutoff point to identify TAVI candidates. The cardiac surgery unit has a very low mortality rate (1–2 %) for surgical AVR in 75 year old patients, therefore additional elements are taken in consideration such as frailty and additional comorbidities. However, over the years there was a mild but constant shift toward lower risk patients.

In **Florence**, the HT evaluates all patients in the cardiology unit but none in the cardiac surgery unit. There is a belief that patients aged 80 years and older should be eligible for TAVI and above this cutoff point clinicians need good reasons not to perform TAVI.

Waiting lists vary between centers. In **Padua**, patients must wait two months before undergoing a TAVI procedure. In **Bologna**, the waiting time can vary between three and four months. In contrast, TAVI candidates in **Florence** have the procedure within one month.

How to improve efficiency and treat more patients?

Would your hospital be ready to meet demand if all aortic stenosis patients at intermediate surgical risk required TAVI?

All panelists said that budget constraints and lack of organizational resources including beds, nurses and operators, would make it impossible to treat all of these patients.

It was agreed that it is more difficult to get additional resources for TAVI than for surgical AVR, since the perceived total cost – which encompasses all expenses related to the procedure such as the valve, hospital bed, length of stay, etc – is much higher and mortality rates are similar.

There are several ways in which efficiency and cost-effectiveness could be improved so that more patients are able to benefit from treatment with TAVI. Members of the panel recommended that hospitals shorten the time from diagnosis to treatment, implement standardized procedures for screening and evaluation, and reduce the number of days in hospital.