Transesophageal Echocardiogram Always Before TAVI?

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Cardiovascular imaging is crucial in the selection and planning of interventions for structural heart disease.[1]

Transcatheter aortic valve implantation (TAVI) has transformed the management of severe aortic stenosis (AS) in high-risk surgical populations and is currently being expanded to intermediate- and low-risk populations.[2]

Transesophageal echocardiography (TEE) offers high spatial resolution and excellent anatomical characterization of the aortic valve. However, it is a semi-invasive examination that requires preparation, fasting, and sedation. Furthermore, it can cause discomfort and poses risks, albeit low, such as esophageal perforation and bronchoaspiration.[1]

Despite the historical importance of TEE in TAVI, its routine use prior to the procedure has been questioned. In general, in this scenario, TTE is the initial examination in the evaluation of severity quantification, ventricular function, and other associated valvular pathologies, while computed tomography angiography (CT angiography) has become the standard for planning and choosing the prosthesis.[3]

The current ACC/AHA (2020) and ESC (2021) guidelines do not recommend the systematic use of TEE before TAVI. Therefore, the flowchart focuses on TTE and CT angiography, with TEE reserved for specific situations such as: suboptimal TTE images or inconclusive CT angiography, diagnostic uncertainty or discrepancy in the severity of AS, presence of aortic regurgitation disproportionate to the degree of valve calcification, evaluation of associated valvular diseases, evaluation of suspected endocarditis, severe renal failure, allergy to iodinated contrast, and presence of atrial fibrillation where left atrial appendage occlusion is considered in combination with TAVI. In these contexts, TEE adds essential clinical information and can change the management.[4,5,6]

Another relevant point is the use of TEE during the procedure, as it is useful in assessing prosthesis positioning, residual periprosthetic regurgitation, ventricular function, and immediate complications (annular rupture, aortic dissection, and early prosthetic dysfunction).[1,7]

However, in cases selected by the Heart Team, the TAVI "minimalist approach" has become increasingly common. In these cases, monitoring and evaluation are performed with TTE, with TEE reserved for support in the assessment of complications, such as localization and quantification of periprosthetic regurgitation, aortic dissection, and acquired Gerbode defects.[1,7]

In the context of the "Heart Team," the echocardiographer is an integral part and must adopt a critical and selective approach, opting for TEE before TAVI and/or intraprocedurally only when its contribution is clear.[1]

Therefore, the answer to the initial question is NO.

TEE should not be mandatory before TAVI, but rather reserved for select cases in which TTE or CT angiography cannot provide sufficient information for safe and effective planning.[3,6]

In a value-based medicine environment, the performance of exams should be guided by real clinical benefit, not by automatic institutional protocols.

Rational use preserves their high clinical utility and avoids unnecessary risks to patients.[6]

Keywords

Transcatheter Aortic Valve Replacement; Transesophageal Echocardiography; Aortic Valve Stenosis; Magnetic Resonance Imaging

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