

IS IT TIME TO CHANGE THE GUIDELINES?

NOT PURSUING AORTIC VALVE REPLACEMENT FOR MODERATE AORTIC STENOSIS AT THE TIME OF CORONARY ARTERY BYPASS GRAFT IN THE ERA OF TRANSCATHETER AORTIC VALVE REPLACEMENT



Viral Desai MD, Marcus Stoddard MD
University of Louisville, Louisville, Kentucky

INTRODUCTION

Current American College of Cardiology and European Society of Cardiology guidelines for aortic valve replacement (AVR) with moderate aortic stenosis (AS) undergoing coronary artery bypass graft (CABG) recommend getting concomitant surgical valve replacement. However, with the option of future transcatheter aortic valve replacement (TAVR), intra-operative transesophageal echocardiography (TEE) could be useful to guide the choice of management in patients with moderate AS requiring CABG.

CASE

70-year-old female with a history of hypertension, hyperlipidemia, type 2 diabetes mellitus and severe coronary artery disease requiring multiple percutaneous coronary interventions presented with worsening exertional chest pain. **EKG**:- showed dynamic T wave changes. **Peak Troponin I**:- 2.51 consistent with type I non-ST elevation myocardial infarction



Cardiac work-up

LHC:- >80% stenosis in all three major coronary vessels.

TTE:- LVEF 48%, AV Area 1.2cm² moderate calcifications and mean AV gradient of 13mmHg, consistent with low gradient moderate AS.

CABG was planned along with intra-operative TEE to evaluate the need for auxiliary SVR.

Intra-op TEE :- showed an aortic valve area of 1.37cm² confirming moderate AS with complete restricted opening of the non-cusp, partial opening of the left cusp and full opening of the right cusp.



Triple vessel CABG (LIMA to LAD, SVG to OM1 and PDA) was performed and patient discharged with cardiology clinic follow up for **serial echocardiography planned for future AVR with TAVR if severe AS developed or preoperative symptoms reappeared.**

In the era of TAVR, this case highlights that, in patients with significant comorbidities, it may be reasonable to not pursue concomitant AVR along with CABG in patients with moderate AS.

DISCUSSION

Current Guidelines



American Heart Association



EUROPEAN SOCIETY OF CARDIOLOGY

AVR (SVR/TAVR) is reasonable for patients with moderate AS (stage B, progressive) (aortic velocity 3.0–3.9 m/s) who are undergoing other cardiac surgery. **Ila** **C**

SAVR should be considered in patients with moderate aortic stenosis undergoing CABG or surgery of the ascending aorta or of another valve. **Ila** **C**

- Even though ESC and AHA/ACC recommend SVR in patients with moderate AS undergoing other cardiac surgery, combined surgical valve replacement and CABG carry a higher risk of mortality than isolated CABG, especially in patients with significant comorbidities.
- Moreover, several studies show that in patients with prior CABG, TAVR appears to have lower in-patient mortality and adverse events along with better short-term survival outcomes when compared to surgical valve replacement.
- Hence, in the era of TAVR, a patient with significant co-morbidities using serial post-op echocardiography for potential AVR with TAVR if severe AS develops or preoperative symptoms reappear is a reasonable alternative to a combined surgical strategy

REFERENCES

1. Dagenais F, Mathieu P, Doyle D, Dumont E, Voisine P. Moderate aortic stenosis in coronary artery bypass grafting patients more than 70 years of age: to replace or not to replace? Ann Thorac Surg. 2010;90(5):1495-9; discussion 9-500.
2. Baumgartner H, Falk V, Bax JJ, De Bonis M, Hamm C, Holm PJ, et al. 2017 ESC/EACTS Guidelines for the management of valvular heart disease. European Heart Journal. 2017;38(36):2739-91
3. Garg A, Rao SV, Visveswaran G, Agrawal S, Sharma A, Garg L, et al. Transcatheter Aortic Valve Replacement Versus Surgical Valve Replacement in Low-Intermediate Surgical Risk Patients: A Systematic Review and Meta-Analysis. 2017.
4. Nishimura RA, Otto CM, Bonow RO, Carabello BA, Erwin JP, 3rd, Guyton RA, et al. 2014 AHA/ACC guideline for the management of patients with valvular heart disease: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines. J Am Coll Cardiol. 2014;63(22):e57-185.