patients with a bioprosthesis between 2 groups with different time periods carries an implicit risk of bias. Duration of follow-up and therefore time for prosthesis degeneration requiring reintervention will be longer in the 2000-2008 group.

The main take-home message is that bioprostheses are an excellent option for young patients (aged 50-65 years) who undergo isolated AVR. Although reintervention is higher than in those with mechanical AVR, mortality associated with re-do isolated AVR is not reflected in long-term survival.

See Article page 609.

Commentary: Surgical aortic valve replacement for the younger patient, but which one?

Norman Briffa, MB, MD, FRCS(CTh)

In this multicenter observational study from Spain,¹ outcomes of 5215 patients age 55 to 65 years who underwent isolated surgical aortic valve replacement (SAVR) were examined. The authors used propensity matching to create 2 groups: patients who received a mechanical prosthesis (n = 1822) and those who received a tissue prosthesis (n = 911).

The main finding from the study was that at 15 years, there was no significant difference in survival or freedom from a composite of valve-related morbidities. This study demonstrates why the question of prosthetic choice in younger patients is still pertinent and does not have a straightforward answer. When commenting on the prosthetic type, it is useful, like all good seekers of the truth, to go back to the original source: 2 randomized trials published at the dawn of this millennium.^{2,3} These studies demonstrated that patients with

Norman Briffa, MB, MD, FRCS(CTh), dressed for the season.

CENTRAL MESSAGE

The treatment of aortic valve disease in patients age <65 years remains surgical. Patient choice and attitudes toward complications associated with either prosthesis remain key to the device used.

References

1. Rodriguez-Caulo EA, Blanco-Herrera O, Berastegui E, Arias-Dachary J, Souaf S, Parody G, et al; SPAVALVE study group. Biological versus mechanical prostheses for aortic valve replacement. *J Thorac Cardiovasc Surg.* 2023;165:609-17.e7.
2. Kytö V, Sipilä J, Ahtela E, Rautava P, Gunn J. Mechanical versus biologic prostheses for surgical aortic valve replacement in patients aged 50 to 70. *Ann Thorac Surg.* 2020;110:102-10.
3. Hirji SA, Kolkailah AA, Ramirez-Del Val F, Lee J, McGurk S, Pelletier M, et al. Mechanical versus bioprosthetic aortic valve replacement in patients aged 50 years and younger. *Ann Thorac Surg.* 2018;106:1113-20.
4. Diaz R, Hernandez-Vaquero D, Alvarez-Cabo R, Avanzas P, Silva J, Moris C, et al. Long-term outcomes of mechanical versus biological aortic valve prosthesis: systematic review and meta-analysis. *J Thorac Cardiovasc Surg.* 2019;158:706-14.e18.

From the Sheffield Teaching Hospitals NHS Trust, University of Sheffield, Sheffield, United Kingdom.

Disclosures: The author reported no conflicts of interest.

The *Journal* policy requires editors and reviewers to disclose conflicts of interest and to decline handling or reviewing manuscripts for which they may have a conflict of interest. The editors and reviewers of this article have no conflicts of interest.

Received for publication Feb 8, 2021; revisions received Feb 8, 2021; accepted for publication Feb 9, 2021; available ahead of print Feb 19, 2021.

Address for reprints: Norman Briffa, MB, MD, FRCS(CTh), Cardiothoracic Centre, Chesterman Wing, Northern General Hospital, Herries Rd, Sheffield, United Kingdom S5 7AU (E-mail: N.Briffa@sheffield.ac.uk).

J Thorac Cardiovasc Surg 2023;165:619-20

0022-5223/\$36.00

Crown Copyright © 2021 Published by Elsevier Inc. on behalf of The American Association for Thoracic Surgery

<https://doi.org/10.1016/j.jtcvs.2021.02.044>

aortic mechanical prostheses were more likely to survive for 15 years and more likely to suffer anticoagulant-related bleeding. Those with a tissue prosthesis were more likely to require reintervention. The latter 2 findings have been confirmed in retrospective observational studies,⁴ including this one. Unlike in many countries, in Spain the utilization of tissue valves in patients under 70 remains low at under 30%. The main strength of this publication is in the large numbers expected in the study of a national registry.

The study has some methodological weaknesses. Survival, hospital admissions, and diagnoses were established not by validated national registries, but rather by telephone

contact with individual patients. The omission of patients who underwent combined procedures was unfortunate. Concomitant conditions, such as coronary disease, have a profound effect on life expectancy and thus on prosthetic choice. Interesting findings include the lower postoperative gradients in the mechanical group despite no difference in prosthetic sizes, and the fact that patients younger than 55 on warfarin did not have a significantly higher bleeding rate. The nonsignificantly higher stroke rate in patients with mechanical prostheses was unexpected and noted in the abstract. A similar higher tissue prosthetic endocarditis rate was not. For patients age <65 who undergo SAVR, there are pros and cons associated with either type of prosthesis. In the absence of a contraindication to taking warfarin, the choice must be a shared decision, based on

life expectancy and a good understanding of the ongoing healthcare needs of the younger patient with either a mechanical or a tissue prosthesis.

References

1. Rodríguez-Caulo E, Blanco-Herrera O, Berastegui E, Arias-Dachary J, Souaf S, Parody G, et al; the SPAVALVE Study Group. Biological versus mechanical prostheses for aortic valve replacement. *J Thorac Cardiovasc Surg*. 2023;165:609-17.e7.
2. Oxenham H, Bloomfield P, Wheatley DJ, Lee RJ, Cunningham J, Prescott RJ, et al. Twenty year comparison of a Björk–Shiley mechanical heart valve with porcine bioprostheses. *Heart*. 2003;89:715-21.
3. Hammermeister K, Sethi GK, Henderson WG, Grover FL, Oprian C, Rahimtoola SH. Outcomes 15 years after valve replacement with a mechanical versus a bioprosthetic valve: final report of the Veterans Affairs randomized trial. *J Am Coll Cardiol*. 2000;36:1152-8.
4. Glaser N, Jackson V, Holzmann MJ, Franco-Cereceda A, Sartipy U. Aortic valve replacement with mechanical vs biological prostheses in patients aged 50-69 years. *Eur Heart J*. 2016;37:2658-67.

See Article page 609.

Commentary: Younger patients are choosing tissue valves: Do the data match their fervor?

Jessica Forcillo, MD-MSc, MPH,^a and
Vinod H. Thourani, MD^b

Over the past 5 years, there has been renewed discussion regarding the choice of bioprosthetic or mechanical valves for those undergoing surgical aortic valve replacement (SAVR).¹⁻⁴ The choice of valve prosthesis should be based on several factors, including valve durability, expected hemodynamic parameters, surgical risk, the use of long-term anticoagulation therapy and its related bleeding risk, and patient values and preferences.⁵ The age range that remains a gray zone is between 50 and

Jessica Forcillo, MD-MSc, MPH, and Vinod H. Thourani, MD

CENTRAL MESSAGE

The AVR prosthesis choice in younger patients remains controversial. Shared-decision with patients should take into account the risk of stroke and bleeding in mechanical implants or SVD in bioprosthetic valves.

65 years, and data on survival for this group are divergent. For those patients younger than age 50 years, there is a demonstrable higher and earlier risk of structural valve deterioration (SVD) after bioprosthetic implantation that will require a reintervention (eg, redo-SAVR or transcatheter aortic valve replacement [TAVR]). The overall predicted 15-year risk of requiring reoperation for SVD is

From the ^aCardiac Surgery Department, Centre Hospitalier de l'Université de Montréal, Université de Montréal, Montréal, Québec, Canada; and ^bDepartment of Cardiovascular Surgery, Marcus Valve Center, Piedmont Heart Institute, Atlanta, Ga. Disclosures: Dr Thourani is an advisor for Abbott Vascular, Cryolife, and Edwards Lifesciences. The other author reported no conflicts of interest.

The *Journal* policy requires editors and reviewers to disclose conflicts of interest and to decline handling or reviewing manuscripts for which they may have a conflict of interest. The editors and reviewers of this article have no conflicts of interest.

Received for publication Feb 14, 2021; revisions received Feb 14, 2021; accepted for publication Feb 17, 2021; available ahead of print Feb 24, 2021.

Address for reprints: Vinod H. Thourani, MD, Department of Cardiovascular Surgery, Marcus Valve Center, Piedmont Heart Institute, 95 Collier Rd, Suite 5015, Atlanta, GA 30309 (E-mail: vinod.thourani@piedmont.org).

J Thorac Cardiovasc Surg 2023;165:620-1

0022-5223/\$36.00

Copyright © 2021 by The American Association for Thoracic Surgery

<https://doi.org/10.1016/j.jtcvs.2021.02.061>