Reply: Do not hesitate to use a mechanical valve in tricuspid valve position because of stroke and valve thrombosis risk for young age patients.

Suk Ho Sohn, MD, Jae Woong Choi, MD, PhD

PII: S2666-2736(23)00126-2
DOI: https://doi.org/10.1016/j.xjon.2023.06.001
Reference: XJON 790

To appear in: JTCVS Open

Received Date: 1 June 2023
Accepted Date: 1 June 2023

Please cite this article as: Sohn SH, Choi JW, Reply: Do not hesitate to use a mechanical valve in tricuspid valve position because of stroke and valve thrombosis risk for young age patients., JTCVS Open (2023), doi: https://doi.org/10.1016/j.xjon.2023.06.001.

This is a PDF file of an article that has undergone enhancements after acceptance, such as the addition of a cover page and metadata, and formatting for readability, but it is not yet the definitive version of record. This version will undergo additional copyediting, typesetting and review before it is published in its final form, but we are providing this version to give early visibility of the article. Please note that, during the production process, errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Copyright © 2023 The Authors. Published by Elsevier Inc. on behalf of The American Association for Thoracic Surgery
Reply: Do not hesitate to use a mechanical valve in tricuspid valve position because of stroke and valve thrombosis risk for young age patients.

Authors: Suk Ho Sohn, MD¹, Jae Woong Choi, MD, PhD¹

¹Department of Thoracic and Cardiovascular Surgery, Seoul National University Hospital, Seoul National University College of Medicine, Seoul, Republic of Korea

Conflict of Interest
There are no conflicts of interest.

Corresponding Authors:
Jae Woong Choi, MD, PhD
Department of Thoracic and Cardiovascular Surgery, Seoul National University Hospital, Seoul National University College, 101 Daehak-ro, Jongno-gu, Seoul 03080, Korea
E-mail: cjw01@snu.ac.kr, Tel: +82-2-2072-4069, Fax: +82-2-764-3664

Article Word Count: 465
Central picture legend

Suk Ho Sohn, MD, and Jae Woong Choi MD, PhD
We thank Dr. Jef Van den Eynde and Art Schuermans for the valuable comments on our article on the long-term results of tricuspid valve replacement (TVR). Various factors must be considered for the optimal prosthesis choice in the tricuspid valve (TV) position. When a mechanical valve is implanted into the TV, a high international normalized ratio (INR) level must be maintained to prevent valve thrombosis, and consequently, the risk of hemorrhagic stroke is known to be high. In addition, patients who require TVR often have a history of valvular surgery or progressed right ventricular dysfunction. Therefore, bioprosthetic valves tend to be preferred because life expectancy of these patients may be expected not be long.

However, a recent study using our institutional data confirmed that the 15 year-survival rate after TVR was > 50%, and the cumulative incidence of structural valve deterioration (SVD) at 10 and 15 years after TVR was 25.6% and 56.1%, respectively. These values were higher than those of SVD in the aortic or mitral position. Based on these results from our institutional data, we designed the present study using National Health Insurance database to determine which prosthesis, mechanical versus biological, has a higher survival rate when considering the risk of reoperation and stroke. In this study, using large cohort national database, we confirmed that the bioprosthetic valve in the TV position requires frequent redo-TV (1.2 per 100 patient-years), and the mechanical valve in the TV position significantly raise the stroke risk. In conclusion, this study reconfirmed that although the mechanical valve increased the risk of stroke, it was more advantageous for survival in relatively young patients whose survival would be compromised due to the low durability of the bioprosthetic valve.

Retrospective studies cannot adjust for all individual risks, and studies using National Health Insurance database have the disadvantage of not being able to identify important information such as echocardiographic data, prosthesis size, and surgical methods. However, despite these
drawbacks, major strength of this study is that it analyzed large-scale real-world survival data in almost all TVR patients conducted in Korea during the recent 16 years. As Dr. Jef Van den Eynde pointed out, it is reasonable to consider the biological age of the patient rather than chronological age during valve selection. Because the participants of this study were patients who underwent TVR, their biological age would be higher than their chronological ages, and even higher than those of the general population without tricuspid valve disease. Nonetheless, it should be noted that mechanical valves are significantly beneficial for survival in patients aged from 54 to 65 requiring TVR. Of course, since this study did not adjust for all confounding factors and the biological age may be particularly high in some cases, a prosthesis choice by the heart team discussing reflecting the finding from this study is necessary.

REFERENCES


