JACC: ASIA VOL. 3, NO. 2, 2023

EDITORIAL COMMENT

Does Age Matter After Successful Left Atrial Appendage Closure?*

Yong-Joon Lee, MD, Jung-Sun Kim, MD

Although oral anticoagulation (OAC) therapy is considered as the first-line therapy for thromboembolic stroke prevention among patients with nonvalvular atrial fibrillation, several randomized clinical trials have demonstrated the comparable effect of left atrial appendage closure (LAAC) regarding stroke prevention compared with OAC therapy.[1,2] Therefore, LAAC may allow persistent prevention toward thromboembolic events as well as the avoidance of bleeding events related to long-term OAC therapy. However, despite the benefits of LAAC, device-related thrombosis (DRT) remains as an Achilles' heel of LAAC, and an elaborated approach—considering patients' characteristics, device and procedural aspects, and antithrombotic treatment strategies—is required to prevent DRT. An idealistic approach for choosing an antithrombotic treatment strategy should be based on balancing the efficacy regarding thromboembolic risks with the safety regarding bleeding risks. However, because of a lack of evidence, the selection of the appropriate regimen and duration of antithrombotic treatment after LAAC largely depends on the physician's choice based on a patient's risk for thromboembolic and bleeding events.[3] According to a recent review,[3] 2 approaches for antithrombotic treatment are recommended for patients who are eligible for short-term full-dose OAC therapy: 1) full-dose OAC plus aspirin for 45 days and then clopidogrel plus aspirin for 3 to 6 months; or 2) full-dose OAC plus aspirin for 3 to 6 months followed by aspirin monotherapy. On the other hand, for patients who are ineligible for short-term full-dose OAC therapy, low-dose direct OAC (DOAC) plus aspirin for 3 to 6 months or clopidogrel plus aspirin for 1 to 6 months, followed by aspirin monotherapy, is recommended, and even aspirin-based single-antiplatelet therapy may be considered for those with extremely high risk for bleeding events.[3] The diversity in antithrombotic treatment regimens and durations after LAAC reflects the uncertainties in the treatment.

In this issue of *JACC: Asia,* Asami et al[4] report age-related short-term outcomes in Japanese patients with nonvalvular atrial fibrillation who underwent LAAC based on their prospective multicenter registry. Although a 97% device success rate and 90% OAC cessation rate were achieved at the 45-day follow-up, the elderly group (age of >80 years), which made up 32% of the total study population, had significantly more frequent major bleeding events (6.9%) compared to the other age groups (3.7% for age between 70 and 80 years and 1.0% for age younger than 70 years) in spite of similar post-LACC antithrombotic treatment regimens.[4] Meanwhile, a few DRT (1.4%) and stroke events (0.4%) were observed, with no difference according to age groups.[4] These outstanding results suggest that age-specific post-LAAC antithrombotic treatment strategies should be considered because of their high vulnerability for bleeding events.

Although the results provide important clinical implications, there are some important limitations to consider while interpreting their results. First, this study was not randomized, and the clinical events were not adjudicated by a central clinical endpoint committee. Second, it focused only on the early-stage results (45 days) after LAAC. Considering that the current recommendation for intensive antithrombotic treatment is for an initial 3 months, the 45-day results that this study provide may not be sufficient. Finally, this study only suggests the necessity for an age-based tailored approach for post-LAAC antithrombotic treatment and does not offer

*Editorials published in *JACC: Asia* reflect the views of the authors and do not necessarily represent the views of *JACC: Asia* or the American College of Cardiology.

From Severance Hospital, Yonsei University College of Medicine, Seoul, South Korea.

The authors attest they are in compliance with human studies committees and animal welfare regulations of the authors' institutions and Food and Drug Administration guidelines, including patient consent where appropriate. For more information, visit the Author Center.

ISSN 2772-3747 https://doi.org/10.1016/j.jacasi.2022.11.015

JACC: ASIA, VOL. 3, NO. 2, 2023
APRIL 2023:285–286

which strategy may be preferred in elderly patients. Recently, Della Rocca et al[5] reported the beneficial effect of half-dose DOAC plus aspirin for 45 days followed by long-term half-dose DOAC monotherapy compared to standard antithrombotic treatment on both the thromboembolic and the bleeding outcomes during a median of 13 months of follow-up. Furthermore, results of the ongoing FADE-DRT (Efficacy of Different Anti-Thrombotic Strategies on Device-Related Thrombosis Prevention After Percutaneous Left Atrial Appendage Occlusion; NCT04502017) trial, which aims to compare different experimental antithrombotic treatment strategies after LAAC, are expected.

To conclude, Asami et al[4] raise the issue of age in those who underwent successful LAAC based on the Japanese experience in a prospective multicenter registry and should be complimented for their outstanding study, which may motivate further randomized clinical trials regarding optimal antithrombotic treatment, especially focusing on age. Because of the rapid development of novel LAAC devices with less thrombogenic material, shorter and less intensive antithrombotic treatment may be applicable, especially to patients with high bleeding risk. However, given the uncertainties and therapeutic dilemma in balancing the risk between thromboembolic and bleeding events, more evidence is required.

FUNDING SUPPORT AND AUTHOR DISCLOSURES

Dr Kim has received proctoring fees from Abbott Vascular. Dr Lee has reported that he has no relationships relevant to the contents of this paper to disclose.

ADDRESS FOR CORRESPONDENCE: Dr Jung-Sun Kim, Division of Cardiology, Severance Hospital, Yonsei University College of Medicine, 03722 Yonsei-ro 50-1, Seodaemun-gu, Seoul, South Korea. E-mail: kjs1218@yuhs.ac.

REFERENCES

1. Reddy VY, Doshi SK, Kar S, et al. 5-year outcomes after left atrial appendage closure: from the PREVAIL and PROTECT AF Trials. *J Am Coll Cardiol*. 2017;70:2964–2975.

2. Osmancik P, Herman D, Neuzil P, et al. Left atrial appendage closure versus direct oral anticoagulants in high-risk patients with atrial fibrillation. *J Am Coll Cardiol*. 2020;75:3122–3135.

3. Saw J, Nielsen-Kudsk JE, Bergmann M, et al. Antithrombotic therapy and device-related thrombosis following endovascular left atrial appendage closure. *J Am Coll Cardiol Intv*. 2019;12:1067–1076.

4. Asami M, Naganuma T, Ohno Y, et al. Initial Japanese multicenter experience and age-related outcomes following left atrial appendage closure: the OCEAN-LAAC Registry. *JACC: Asia*. 2023;3(2):272–284.

5. Della Rocca DG, Magnocavallo M, Di Biase L, et al. Half-dose direct oral anticoagulation versus standard antithrombotic therapy after left atrial appendage occlusion. *J Am Coll Cardiol Intv*. 2021;14:2353–2364.

KEY WORDS age-related outcomes, left atrial appendage closure, left atrial appendage occlusion, multicenter registry, nonvalvular atrial fibrillation