Left Atrial Size and the Risk for Recurrence After Catheter Ablation: Is a Small Left Atrial as Bad as a Large One? — Reply —

We are glad to have received this letter from Professor Kornej. In fact, the recurrence of atrial fibrillation (AF) after radiofrequency catheter ablation (RFCA) is still an unsolved problem that needs further discussion.1

First, we agree with you that left atrial (LA) size measured by echocardiography was not as accurate as by cardiac magnetic resonance (CMR). However, for reasons of economics and time, it is not possible to perform CMR for every patient with AF. The results obtained by echocardiography may be more suitable for clinical application. In addition, there have been many studies of measuring LA size by echocardiography.2

Second, different strategies have been proposed to improve RFCA success, including adjuvant substrate modification in addition to pulmonary vein isolation (PVI). The benefits of such strategies are still unresolved.3 4 In a study by Verma et al, the data showed that linear ablation or ablation of complex fractionated electrograms (CFAEs) did not reduce the recurrence rate of AF, which was not in accordance with the guideline recommendation at that time.5 Kircher et al reported that individually tailored substrate modification guided by voltage mapping could improve the prognosis of patients after RFCA.4 However, the sample size of that study was too small and the LA electroanatomical substrate (low-voltage areas [LVA]) was mainly found in patients with persistent AF. In our study, most patients with small LA size had paroxysmal AF. In our study, most patients with small LA size had paroxysmal AF, so individually tailored substrate modification may have had a limited effect on the results of our study. Recently, we have performed individually tailored substrate modification in patients with persistent AF and these studies are ongoing.

Furthermore, in the 2017 Expert Consensus Statement on Catheter and Surgical Ablation of Atrial Fibrillation, the minimum follow-up screening for AF recurrence includes 24-hour Holter at the end of the follow-up period.6 48-hour Holter monitoring is not as accurate as 1–2-week monitoring or use of injectable loop recorders, but it is definitely more accurate than 24-hour Holter monitoring. In our study, every followed or symptomatic patient will undergo 48-hour Holter monitoring. Increasing the duration of monitoring may also make the results more credible.

Finally, the mechanism underlying AF recurrence is complex and some hypotheses may not fit with our understanding. Deng et al found that both underweight (BMI <18.5 kg/m²) and obesity (≥30 kg/m²) were associated with more AF recurrence; BMI and AF recurrence after RFCA were also represented by a U-shaped curve.6 Data from that study indicated that the LA was smaller in underweight patients, and most of them had paroxysmal AF. That result coincided with our study results. Poor manipulation during catheter ablation in a small atria may be one of the reasons for the worse outcomes. Just as phosphodiesterase inhibitors are the optimal treatment for Asians with heart failure, they are contraindicated in Western patients.7 The current RFCA strategies may be more suitable for patients with large atria but contraindicated in patients with small atria.

All in all, the mechanism underlying AF recurrence is complex and more studies are needed to further decipher the factors that influence the prognosis of AF after RFCA.

Disclosures
None declared.

References

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