Electro Heart Team: integrating new approaches to atrial fibrillation management

To the editor In August 2020, the new European Society of Cardiology / European Association of Cardio-Thoracic Surgery guideline on atrial fibrillation (AF) was published.[1] We, therefore, read with interest the study by Wojdyła-Hordyńska et al,[2] published in the October 2020 issue of *Kardiologia Polska* (*Kardiol Pol, Polish Heart Journal*), presenting trends in endocardial treatment of AF using data from 38 Polish electrophysiology centers. A systematic increase in endocardial AF ablations using dominant cryoballoon ablation was observed in 69% of cases, followed by radiofrequency ablation (31%). Importantly, the first or second redo ablation was performed more often by radiofrequency catheter ablation and in high-volume centers with over 100 AF ablations annually.

Currently, AF is an epidemic with a 2% to 4% prevalence with a large increases in disease burden expected in the future. It is therefore pleasing to hear that 88 centers can perform endocardial ablation in Poland. Of note, many centers only carry out cryoablation, while radiofrequency is done more frequently in high-volume centers, similarly to a redo procedure. Atrial fibrillation catheter ablation is very effective in sinus rhythm maintenance and should be the first-line therapy for rhythm control after failure or intolerance to anti-arrhythmic drugs. Despite several endocardial procedures and different ablation techniques, sinus rhythm maintenance may still not be achieved.[1] Randomized controlled trials on thoracoscopic ablation demonstrated significantly higher freedom from atrial tachyarrhythmia and less need for repeat ablations after thoracoscopic ablation compared with AF catheter ablation for paroxysmal or persistent AF.[3] Another advantage of thoracoscopic procedures is the likelihood of a simultaneous epicardial left atrial appendage occlusion (LAAO) which reduces stroke risk; however, surgical approaches were associated with more complication rates and severity. Thus, it seems reasonable to consider thoracoscopic surgery preferentially in patients after previously failed catheter ablation or those at high risk of catheter ablation failure.[1]

Novel catheter and thoracoscopic technologies have significantly improved AF treatment outcomes; however, AF still remains a complex condition requiring a multifaceted and multidisciplinary management as well as close cooperation between cardiac surgeons and electrophysiologists. In high-volume centers, Electro Heart Teams should therefore be created to support advanced AF management. Similar solutions are observed in different areas of cardiology, for example, heart failure management and transcatheter procedures.

The Electro Heart Team concept was introduced following the 6th German Atrial Fibrillation Network association and European Heart Rhythm Association Conference.

The roles of the Electro Heart Team are as follows: 1) complex rhythm control therapy, for example, when catheter ablation fails to control symptomatic AF, when AF surgery is considered, or in situations that impair rhythm control therapy; 2) complex stroke prevention, for example, when anticoagulation is contraindicated, or when left atrial appendage exclusion, ligation, or clipping are required.[4]

This year, an Electro Heart Team was established at the Jagiellonian University Medical College and the John Paul II Hospital in Kraków and consists of an electrocardiologist, a cardiac surgeon, and a cardiologist. The goal of our high-volume AF treatment center is to help low-volume centers manage complex cases.

The Team is also the best platform for cooperation between an electrocardiologist and cardiac surgeon, and allows the use of hybrid treatments as an effective form of managing AF recurrence.[1] The Team will also limit persistent ablations performed by less experienced centers, which is safer for patients and more economical for the healthcare system. Another advantage of the Electro Heart Team is their potential for complex stroke prevention, due to the cardiac

surgery department required for LAAO procedures by the National Health Fund.[5] Hospitals without a cardiac surgery department cannot perform LAAO procedures, which is the case of most electrophysiology laboratories in Poland. Lastly, the Electro Heart Team will relieve the daily duties of traditional Heart Team.

In our opinion, the Electro Heart Team will improve outcomes of patients with AF and should be established in institutions aspiring to be high-volume centers.

ARTICLE INFORMATION

AUTHOR NAMES AND AFFILIATIONS Artur Bartoszcze, Radosław Litwinowicz, Grzegorz Karkowski, Marcin Kuniewicz, Jacek Lelakowski, Bogusław Kapelak, Jacek Legutko (AB, RL, BK: Department of Cardiovascular Surgery and Transplantology, John Paul II Hospital, Kraków, Poland; RL, MK, J. Lelakowski, J. Legutko: Jagiellonian University Medical College, Institute of Cardiology, Kraków, Poland; GK, MK, J. Lelakowski: Department of Electrocardiology, John Paul II Hospital, Kraków, Poland; J. Legutko: Department of Invasive Cardiology, John Paul II Hospital, Kraków, Poland)

CORRESPONDENCE TO Radoslaw Litwinowicz, MD, PhD, Department of Cardiovascular Surgery and Transplantology, Jagiellonian University, John Paul II Hospital, ul. Prądnicka 80, 30-001 Kraków, Poland, phone: +48 12 614 32 03, email: radek.litwinowicz@gmail.com

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2 Wojdyła-Hordyńska A, Baran J, Mazurek M, et al. Results of a survey concerning atrial fibrillation ablation strategies in Poland. Kardiol Pol. 2020; 78: 974-981.

3 Kim HJ, Kim JS, Kim TS. Epicardial thoracoscopic ablation versus endocardial catheter ablation for management of atrial fibrillation: a systematic review and meta-analysis. Interact Cardiovasc Thorac Surg. 2016; 22: 729-737.

4 Kotecha D, Breithardt G, Camm AJ, et al. Integrating new approaches to atrial fibrillation management: the 6th AFNET/EHRA Consensus Conference. Europace. 2018; 20: 395-407.

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Authors' reply Worldwide, atrial fibrillation (AF) is the most common sustained cardiac arrhythmia in adults. It is therefore a unit that poses a great challenge to health systems. A great number of studies has been carried out and much more research is still needed to understand the mechanisms of development and effective treatments for AF. Currently, in Poland, the dominant method of treatment of atrial fibrillation is percutaneous endocardial ablation, which is a safe and effective.[1] Yet, models predicting the risk of recurrence after the procedure and new treatment techniques are considered necessary. The possibilities of interspecialization cooperation in cardiology and cardiosurgery within heart teams have become a new opportunity for patients with coronary heart disease, valve diseases or recurrent arrhythmia after endocardial surgery. This applies in particular to patients undergoing cardiac surgery during repair or replacement of the mitral valve. In the latest guidelines conducted in collaboration with the European Association of Cardio-Thoracic Surgery, a new register of the Polish National Health Service was mentioned, which documented the improvement in survival, when ablation is performed concomitant to mitral valve repair or exchange or coronary surgery procedures.[2]

For this reason, the guidelines also include indications for surgical interventions in specific subgroups of patients with atrial fibrillation.

Ablation of atrial fibrillation during cardiac surgery should be considered, taking into account the benefits of reducing the burden of arrhythmia and risk factors for recurrence (AF duration, left atrium size, patient age, AF duration, left ventricle or renal dysfunction) and other cardiovascular factors.

1 Hybrid and thoracoscopic procedures should be considered in symptomatic patients with antiarrhythmic drugs-refractory paroxysmal and persistent AF or with recurrent arrhythmia after percutaneous ablation based on the joint decision of electrophysiologists and cardiac surgeons (IIA), or with persistent and symptomatic arrhythmias despite using at least one antiarrhythmic (IIB) drug.

2 In a subgroup of patients who do not tolerate any antiplatelet therapy, either an epicardial catheter approach or thoracoscopic clipping of the left atrium appendage may be an option.[3]

In the group of patients without structural damage of the heart who underwent stand-alone surgical ablation, the 7-year recurrence rate was low and complication rate was high compared with catheter ablation (the FAST [Atrial Fibrillation Catheter Ablation Versus Surgical Ablation Treatment] study with recurrence rate 56% vs 87%).[4] Yet, minimally-invasive surgical ablation in persistent AF is related to more procedural complications, the incidence of adverse events rate is high, the hospitalization longer, and there are no data reflecting the quality of life. Surgical AF ablation concomitant to other cardiac surgery significantly increases the need for pacemaker implantation especially with right atrium procedures. There are still no positive studies on the quality of life after cardiac surgery, the impact on the incidence of strokes both in the case of surgical isolation alone and in the case of the injury closure. Therefore, anticoagulant therapy must be continued. The adverse events after surgical ablation appear more severe than in catheter ablation, hence, a patient-tailored therapy choice is needed. The optimal method is therefore the use of electrophysiological and cardiosurgical resources in a hybrid

method in which minimally invasive epicardial ablation and percutaneous endocardial one are performed, increasing the efficiency of complete pulmonary veins isolation and obtaining a low rate of atrial arrhythmias recurrence.[5] The idea of creating heart teams seems to be promising, especially in high-volume centers with cardiovascular surgery departments; such consultations should be reserved for complicated cases, that is, with valvular defects, coronary artery disease, and after percutaneous redo procedures.

ARTICLE INFORMATION

AUTHOR NAMES AND AFFILIATIONS Agnieszka Wojdyła-Hordyńska, Jakub Baran, Michał Mazurek, Paweł Derejko (AW-H: Department of Cardiology, University Hospital, Opole, Poland; JB: Division of Clinical Electrophysiology, Department of Cardiology, Centre of Postgraduate, Grochowski Hospital, Warsaw, Poland; MM: Department of Cardiology, Congenital Heart Diseases and Electrotherapy, Medical University of Silesia, Silesian Center for Heart Diseases, Zabrze, Poland; PD: Cardinal Stefan Wyszyński, National Institute of Cardiology, Warsaw, Poland)

CORRESPONDENCE TO Agnieszka Wojdyła-Hordyńska, MD, Department of Cardiology, University Hospital, ul. Wincentego Witosa 26, 45-418 Opole, Poland, phone: +48 77 452 06 60, email: agnieszkawojdyla@wp.pl.

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