

The definition of success in atrial fibrillation ablation surgery

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In spite of recent attempts to define and clarify the treatment endpoints in atrial fibrillation (AF) ablation surgery, the definition of success has remained blurred. It is of importance to address the burden of AF in the non-symptomatic population. Thromboembolic events invariably blight the outcomes, therefore freedom from stroke must be incorporated into any definition of success and guidelines. It is essential to meticulously study the long-term outcomes of an unsuccessful treatment as a supplement to the definition of success.

Keywords: Atrial fibrillation ablation surgery; stroke; long-term outcomes; success



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There was no internationally agreed consensus on the definition of success for AF ablation until recently. In 2012, a selection of cardiologists and surgeons produced an “Expert Consensus Statement on Catheter and Surgical Ablation of Atrial Fibrillation”, on behalf of the Heart Rhythm Society (HRS), developed in partnership with the European Heart Rhythm Association (EHRA) and the European Cardiac Arrhythmia Society (ECAS), and in collaboration with the American College of Cardiology (ACC), the American Heart Association (AHA), the Asia Pacific Heart Rhythm Society (APHRS) and the Society of Thoracic Surgeons (STS) (1). This in-depth document covers all aspects of AF ablative treatment and highlights the need to standardize reporting of outcomes in atrial fibrillation (AF) ablation publications. The consensus emphasized freedom from AF/atrial flutter/tachycardia off antiarrhythmic therapy as the primary endpoint of AF ablation, and that the gold standard for reporting the efficacy of a new technique or technology should be the freedom from AF/atrial flutter/tachycardia off antiarrhythmic therapy of greater than 30 seconds’ duration. However, the acceptance that the burden of AF of less than 30 seconds is insignificant has no basis in scientific evidence, despite the need for an agreement for reporting success in studies. What is the burden of AF in the non-symptomatic population and what is the relevance? I do not think the answer is known. I would like all studies to consider a long-term follow-up of all enrolled patients, because the

embolic sequelae of AF are devastating and (if the patient survives) are a severe burden to families and health care systems. It would be unique in the world of research for authors of important studies to have automatic agreement to publish their long-term data in the same journals. The Framingham data has shown a difference in survival between individuals in AF and sinus rhythm (2) but there has never been demonstration of a survival benefit in converting people with AF to sinus rhythm in large population studies, a question which can only be answered with robust long-term follow-up data. Such data is time consuming to collect but will hopefully prove that restoration of sinus rhythm is truly worthwhile.

Sadly, the consensus document does not include being off anticoagulation therapy as a goal of AF ablation, despite being of critical importance to most patients. The bleeding consequences of anticoagulation increase with age and can be both life-changing and life-threatening. We have to consider what patients want; they expect their physicians to give them assurance of the success of any therapy, as their own goal is to be free of symptoms. This is the crux of all therapies and should not be lost in the pursuit of academic acclaim. Ideally we should be able to inform our patients of the success of all treatments and the outcome for those who are unsuccessful. There are so many unanswered questions about the outcome of AF ablation therapies that we cannot honestly tell our patients what the long-term

effect of an unsuccessful ablation will be. Does it depend on rate control? Does it depend on anticoagulation? Or does it depend on removal (or occlusion) of the left atrial appendage?

It is vital that we examine scientifically the outcomes of all therapies for the treatment of AF, but more data is required from larger studies and registries. Currently, we have to be confident when telling patients what the success rate of a procedure is, but be mindful that their definition of success may not be the same as ours. In our experience, many patients are concerned about symptoms but all are worried about the risk of stroke. The longest follow-up data comes from the original patients of Dr. Cox. Dr. Cox's data showed a 99.3% freedom from stroke at 15 years (3), which included patients who remained in AF. This has provoked debate about the role of the left atrial appendage because it is amputated in all Cox maze procedures. We are awaiting data to prove this but there is a strong and logical argument to remove (or occlude) the left atrial appendage.

To summarize, success for the patient is freedom from symptoms and freedom from (embolic) stroke. However, physicians need to standardize their reporting of success and

this (for now) should be in line with the recommendations from the consensus statement (1).

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