

Indications for Atrial Fibrillation Ablation: A Practical Guide for Non-Cardiologists

Indicações para Ablação de Fibrilhação Auricular: Um Guia Prático para Médicos Não-Cardiologistas

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Abstract

Given the increasing incidence of atrial fibrillation and the widespread use of catheter ablation as a form of non-pharmacological treatment, we intended to provide a practical guide for non-cardiologist physicians, concerning the main indications for this intervention based on current guidelines.

Keywords: Atrial Fibrillation; Catheter Ablation

Resumo

Dado o significativo aumento na incidência da fibrilhação auricular, e a crescente divulgação da ablação por cateter como método de tratamento não-farmacológico desta arritmia, foi nossa intenção escrever um guia prático para médicos não-cardiologistas sobre as principais indicações para esta intervenção à luz das presentes guidelines.

Palavras-chave: Ablação por Cateter; Fibrilhação Auricular

Introduction

Atrial fibrillation (AF) is the most common sustained arrhythmia encountered in clinical practice, posing significant risks for stroke, heart failure, and overall mortality. For patients with AF, the primary objectives of long-term treatment are to enhance quality of life by managing symptoms and to reduce the risk of complications, particularly thromboembolism, which is crucial for preventing associated morbidity and mortality.

As internal medicine specialists and family medicine practitioners, your role in managing patients with AF is crucial. Among the therapeutic options, catheter ablation has emerged as a cornerstone, especially for patients who remain symptomatic despite optimal medical therapy. This guide aims to provide a concise yet comprehensive overview of the indications for atrial fibrillation ablation, allowing you to identify better candidates who may benefit from this intervention.

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Symptomatic Paroxysmal Atrial Fibrillation

Ablation is strongly recommended for patients with symptomatic paroxysmal AF who have failed at least one class I or III antiarrhythmic drug (AAD) therapy.

These patients often experience recurrent, unpredictable episodes of AF that significantly impair their quality of life. Ablation can reduce the frequency and severity of episodes, potentially leading to long-term freedom from AF.

In a recent meta-analysis¹ of six studies involving 1200 patients comparing catheter ablation (CA) with antiarrhythmic drugs as first-line treatment for paroxysmal AF, CA was associated with lower rates of recurrent atrial arrhythmias, similar risks of serious adverse events, lower rates of symptomatic atrial arrhythmias and lower healthcare resource utilization.

Other trials, such as the STOP-AF,² CABANA³ and CAPTAF,⁴ have demonstrated superior outcomes in rhythm control and symptom relief with ablation compared to antiarrhythmic drugs.

Symptomatic Persistent Atrial Fibrillation

Primary Indication: Catheter ablation should be considered for patients with symptomatic persistent AF who remain symptomatic after a trial of AADs.

Persistent AF, defined as AF lasting more than seven days or requiring cardioversion, is often more challenging to manage with medications alone. Ablation offers a higher chance of maintaining sinus rhythm and improving symptoms.⁵

The STAR AF II trial⁶ showed that ablation could be more effective than AADs in maintaining sinus rhythm in patients with persistent AF, particularly when pulmonary vein isolation (PVI) is combined with additional ablation strategies.

It is important to highlight that catheter ablation is less effective in patients with persistent AF than in those with paroxysmal AF (emphasizing the need for early referral to a Cardiology/Arrhythmology consultation soon after the diagnosis of AF).⁷

Heart Failure with Reduced Ejection Fraction (HFrEF) and AF

Ablation is recommended for patients with HFrEF and symptomatic AF, mainly when rhythm control is a priority.

AF can exacerbate heart failure symptoms by reducing cardiac output and increasing the risk of decompensation. Restoring

sinus rhythm can improve left ventricular function and overall outcomes.

The CASTLE-AF trial⁸ provided compelling evidence that catheter ablation in patients with HFrEF and AF improved quality of life and reduced hospitalization and mortality compared to medical therapy alone.

AF with Tachycardia-Induced Cardiomyopathy

Catheter ablation should be considered for patients with tachycardia-induced cardiomyopathy secondary to AF, especially when AADs fail to control the heart rate adequately.

Persistent high ventricular rates in AF can lead to tachycardia-induced cardiomyopathy, a reversible cause of heart failure. Ablation can restore sinus rhythm or reduce heart rate, improving cardiac function.

Clinical experience and observational studies support ablation as an effective intervention to reverse tachycardia-induced cardiomyopathy, improving both ejection fraction and symptom burden.

Symptomatic AF in Young Patients

Ablation is recommended for younger patients with symptomatic AF, particularly those who wish to avoid lifelong antiarrhythmic therapy.

Younger patients with AF often face decades of disease management. Ablation offers a potential cure or long-term remission, reducing the need for ongoing medication and its associated side effects. Long-term follow-up studies have shown that younger patients benefit significantly from ablation, with high rates of freedom from AF and improved quality of life.

AF with Contraindications to Antiarrhythmic Drugs

Ablation is recommended for patients with AF who have contraindications to AADs or who have experienced significant side effects.

Some patients are unable to tolerate AADs due to comorbidities or drug-related adverse effects. For these patients, ablation presents a viable alternative to pharmacologic rhythm control.

Ablation is recognized as a class I recommendation⁹ in patients for whom AADs are not an option due to contraindications or intolerance, with data supporting its safety and efficacy in this population.

AF in Asymptomatic Patients

It is frequently difficult to ascertain symptoms causality in AF patients due to the presence of multiple comorbidities. Electric cardioversion is a valuable tool for evaluating the usefulness of rhythm control in ameliorating symptoms.

Apart from symptomatic improvement, catheter ablation is also effective in delaying AF progression from paroxysmal to persistent type. Atrial fibrillation progression to longer-lasting types has an impact on patient outcome since non-paroxysmal AF is associated with a significantly increased risk of thromboembolism, HF, hospital admissions, and mortality compared with paroxysmal AF. In the ATTEST trial, catheter ablation significantly delayed AF progression compared with. Therefore, beyond symptom control, catheter ablation may have a favorable impact by limiting disease progression especially when implemented in the early stages of AF natural course.

Furthermore, AF can also be an etiologic reason for mitral regurgitation or tricuspid regurgitation. In 1 study of 53 patients referred for AF ablation with moderate mitral regurgitation or worse, maintenance of sinus rhythm at follow-up was associated with significant decreases in LA size, mitral annular dilatation, and mitral regurgitation. In another study, 70% of patients undergoing ablation for AF who maintained sinus rhythm at follow-up had improvement in mitral regurgitation.

AF Post-Surgical or Post-Ablation Recurrence

Ablation may be considered for patients with recurrent AF following prior surgical or catheter ablation, particularly if they remain symptomatic.

Recurrence of AF after initial ablation or surgery can occur, especially in persistent or long-standing AF. A repeat ablation procedure may be necessary to achieve long-term rhythm control.

Before referring a patient for catheter ablation of AF, it is crucial to address and control modifiable risk factors such as sleep apnea, hypertension, and obesity. These conditions contribute to the initiation and maintenance of AF and reduce the effectiveness of ablation. Proper management of these risk factors can improve procedural outcomes, reduce the likelihood of AF recurrence, and enhance overall patient health, making it a critical step in pre-ablation care.

Conclusion

Catheter ablation has become an increasingly important therapeutic option for patients with atrial fibrillation, particularly those who remain symptomatic despite medical therapy. As

internal medicine specialists and family medicine physicians, your ability to identify suitable candidates for ablation is critical in optimizing patient outcomes. Key indicators include symptomatic paroxysmal or persistent AF, AF in the context of heart failure, and cases where antiarrhythmic drugs are ineffective, contraindicated, or not tolerated. Understanding these indications will enable you to make informed referrals and contribute to the multidisciplinary care of patients with atrial fibrillation.

This guide outlines the most current recommendations and evidence to aid decision-making. Collaboration with electrophysiologists is essential to tailor individual patient care and ensure the best possible outcomes in AF management.

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