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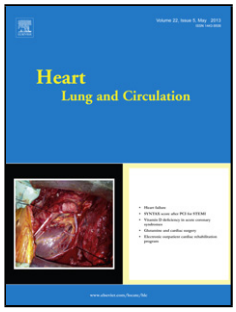

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Radiofrequency Catheter Ablation For Atrial Fibrillation: Approaches And Outcomes

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Abstract

Catheter ablation is now at the forefront of the management of symptomatic atrial fibrillation (AF). Its role in paroxysmal AF is well defined with considerable data supporting its role. Catheter ablation in persistent AF has been less effective and the subject of considerable debate. Mechanistic studies have demonstrated the critical role of pulmonary vein physiology in paroxysmal AF, whereas the mechanisms that sustain persistent AF are not well understood. Additional substrate ablation in persistent AF has not improved long-term outcomes and the use of novel mapping technologies to assess rotor activity remains controversial. This review will focus on the current understanding of the mechanistic basis of paroxysmal and persistent AF, the role of catheter ablation and, recent advances in the management of these complex arrhythmias.

Key Words: Catheter ablation, Radiofrequency catheter ablation, Atrial fibrillation

Introduction

The focus of treatment in patients with atrial fibrillation (AF) centres on assessment and reduction of thromboembolic events by anti-coagulation and the treatment of symptoms. Anti-arrhythmic drug therapy had, for many years, been the cornerstone of therapy in paroxysmal AF. However, the long-term efficacy of medical management in this setting is sub-optimal and often unsatisfactory due to recurrent episodes of AF and side effects[1]. Over the last decade, catheter ablation has evolved into a routine procedure for selected patients with AF. This review will focus on recent advances in the understanding of the mechanistic basis of AF and the use of catheter ablation in its treatment.

Classification of AF

The nomenclature around AF also continues to evolve with the dominant classification being based upon arrhythmia duration and termination. Paroxysmal AF is defined as self-terminating episodes of