



Title	Radiofrequency Catheter Ablation for Cardiac Arrhythmias: A Clinical and Economic Review
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Aim

- To evaluate the evidence for the clinical efficacy of catheter ablation delivered by radiofrequency energy (RFA)
- To evaluate the cost effectiveness of RFA.

Conclusions and results

Clinical Review: The 111 primary research studies that met the inclusion criteria included only 10 randomized controlled trials. Reviewers found that catheter ablation for most cardiac arrhythmias is associated with good procedural success rates. Due to insufficient evidence, however, conclusions cannot be drawn regarding its long-term clinical efficacy. RFA is considered primarily as an adjunct procedure to pacemaker implantation for atrial fibrillation and to antiarrhythmic drugs and implantable cardioverter defibrillator therapy for ventricular fibrillation. Few high-quality outcome studies compare ablation with alternative therapies.

Economic Review: Twenty-one studies were considered, including three cost effectiveness studies from the United States whose findings are likely generalizable to the Canadian context. Although several studies evaluated the costs and quality of life associated with ablation techniques independently, the data are insufficient to determine whether such interventions are cost effective, relative to other treatment options.

Conclusion: More conclusive evidence of the benefits of ablation, especially in patients with atrial fibrillation and atrial flutter, could lead to a significant increase in utilization as this technology continues to evolve.

Methods

Clinical Review: Published literature (Jan. 1985 to Nov. 2001) was identified by searching electronic bibliographic databases. Relevant studies and reports were classified based on tachycardia type: pre-excitation syndromes (most commonly the Wolff-Parkinson-White syndrome), atrioventricular node re-entrant tachycardia, atrial flutter, other atrial tachycardias, atrial fibrillation, and ventricular tachycardia.

Economic Review: For the literature search, appropriate economic terms were substituted for the clinical terms used for the clinical review. Reviewers classified the studies as model-based or trial-based. Cost effectiveness studies were included in the primary analysis. Studies that considered only costs or quality of life, or did not provide sufficient data to calculate an incremental cost effectiveness ratio, were summarized qualitatively.

Further research/reviews required

High-quality outcome studies comparing RFA with alternative therapeutic approaches are needed for all of the different types of ablation procedures.