



Title	Curative Catheter Ablation in Atrial Fibrillation and Typical Atrial Flutter: Systematic Review and Economic Evaluation
Agency	NETSCC, HTA, NIHR Evaluation and Trials Coordinating Centre Alpha House, University of Southampton Science Park, Southampton, SO16 7NS, United Kingdom; Tel: +44 2380 595 586, Fax: +44 2380 595 639; hta@soton.ac.uk, www.hta.ac.uk
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Aim

To determine the safety and clinical and cost effectiveness of radio frequency catheter ablation (RCFA) in curative treatment of atrial fibrillation (AF) and typical atrial flutter.

Conclusions and results

RCFA is a relatively safe and efficacious procedure in treating AF and typical atrial flutter. Some randomized evidence suggests that RCFA is superior to antiarrhythmic drugs (AADs) in patients with drug-refractory paroxysmal AF in terms of freedom from arrhythmia at 12 months. RCFA appears to be cost effective if the observed benefits in quality of life are assumed to continue over a patient's lifetime. Uncertainties remain around longer-term effects of the intervention, and the extent to which published effectiveness findings can be generalized to 'typical' UK practice.

Any planned multicenter RCTs comparing RCFA against best medical therapy for treating AF and/or atrial flutter should be conducted among 'nonpioneering' centers using the techniques and equipment typically employed in UK practice and should measure relevant outcomes. We retrieved 4858 studies for the review of clinical effectiveness. Of these, 8 controlled studies and 53 case series of AF were included. Two controlled studies and 23 case series of typical atrial flutter were included. For atrial fibrillation, freedom from arrhythmia at 12 months in case series ranged from 28% to 85.3%, with a weighted mean of 76%. Three RCTs suggested that RCFA is more effective than long-term AAD therapy in patients with drug-refractory paroxysmal AF. Single RCTs also suggested superiority of RCFA over electrical cardioversion followed by long-term AAD therapy and of RCFA plus AAD therapy over AAD maintenance therapy alone in drug-refractory patients. The available RCTs provided insufficient evidence to determine the effectiveness of RCFA beyond 12 months, or in patients with persistent or permanent AF. Adverse events and complications were generally rare. Mortality rates were

low in both RCTs and case series. Cardiac tamponade and pulmonary vein stenosis were the complications most frequently recorded. For atrial flutter, freedom from arrhythmia at 12 months in case series ranged from 85% to 92%, with a weighted mean of 88%. Neither of the atrial flutter RCTs reported freedom from arrhythmia at 12 months. See Executive Summary link at www.hta.ac.uk/project/1539.asp.

Recommendations

See Executive Summary link at www.hta.ac.uk/project/1539.asp.

Methods

See Executive Summary link at www.hta.ac.uk/project/1539.asp.

Further research/reviews required

All catheter ablation procedures for treating AF or atrial flutter in the UK should be recorded prospectively and centrally. A Central Cardiac Audit Database already exists, but measures to increase compliance in recording RCFA procedures may be needed. This would be of particular value in establishing the long-term benefits of RCFA and the true incidence and impact of any complications. Collecting appropriate quality of life data in any such registry would be of value to future clinical- and cost-effectiveness research. Any planned multicenter RCTs comparing RCFA to best medical therapy for treating AF and/or atrial flutter should be conducted among 'non-pioneering' centers using the techniques and equipment typically employed in UK practice, and they should measure relevant outcomes.