

Final Key Questions

Catheter Ablation Procedures for Supraventricular Tachyarrhythmia (SVTA) Including Atrial Flutter, Atrial Fibrillation

Introduction

The HCA has selected ablation therapies for supraventricular tachyarrhythmia including atrial flutter and atrial fibrillation for review. The topic was nominated based on high levels of concern around efficacy and cost, and on medium levels of concern around safety.

Catheter ablation is a procedure used to treat some types of heart arrhythmias. The procedure is typically performed in a catheter lab and involves guided insertion of catheters from the arm, groin, or neck through the blood vessel and into the heart. In radiofrequency catheter ablation, radiofrequency energy is sent through the catheters to a focal point in the heart that is believed to be the source of the arrhythmia; this energy ablates (destroys) very small areas of the heart to disrupt conduction of abnormal electrical activity. Other types of catheter ablation are becoming available, such as cryoablation. Cryoablation is cooling and freezing of the targeted tissue to alter abnormal electrical activity. Catheter ablation is most commonly used to treat tachyarrhythmias that originate above the ventricles.

Objectives

To systematically review, critically appraise and analyze research evidence comparing the efficacy, effectiveness, and safety of ablation procedures for supraventricular tachyarrhythmia, including atrial flutter and atrial fibrillation with other treatment alternatives. The differential effectiveness and safety as well as the cost-effectiveness of catheter ablation will also be evaluated.

Scope of this HTA

Population: Adults with supraventricular tachyarrhythmia including supraventricular tachycardia, atrial flutter and atrial fibrillation

Intervention: Catheter ablation including radiofrequency or cryoablation procedures

Comparator(s): Medical therapy, cardioversion, pace maker use, Maze or other surgical procedures, therapies intended to control rhythm

Outcomes: For efficacy/effectiveness outcomes include recurrence of and freedom from supraventricular tachyarrhythmia, improvement of symptoms (e.g., palpitation, tachypnea, chest stuffiness, syncope, anxiety), quality of life and other patient-reported outcomes, medication use (e.g., anticoagulants), hospitalization/ readmission, repeat ablation, intermediate outcomes (e.g., maintenance of sinus rhythm, chamber size, ejection fraction), prevention of embolic events or mortality

For safety outcomes include device or procedure related adverse events such as mortality, embolic complications, congestive heart failure, and radiation exposure.

Final Key Questions

1. Does catheter ablation improve patient outcomes in persons with supraventricular tachyarrhythmias compared with other treatment options: What is the evidence for comparative efficacy and effectiveness over the short term and longer term?
 - a. If catheter ablation is efficacious compared with other treatment options, is there differential efficacy between the different types of ablation (e.g., radiofrequency ablation versus cryoballoon ablation)?
2. What is the evidence regarding the comparative efficacy of various approaches to radiofrequency catheter ablation (e.g., PVI alone versus PVI with additional ablation lines, etc.)?
3. What is the evidence of the safety of catheter ablation?
4. Does catheter ablation have any differential efficacy or safety compared with other treatment options in subpopulations? Including consideration of age, gender, race, ethnicity, or disability.
5. What is the evidence of cost-effectiveness of catheter ablation compared with alternative treatment options? Including cost-effectiveness in the short- and long-term.

Key questions are available for public comment for two weeks.

[For additional information on key questions and public comments](#)