# AHRQ: CER #119, Treatment of Atrial Fibrillation

Report Addendum (Submitted June 13, 2014)

All searches run for the AHRQ Comparative Effectiveness Review (CER #119, Treatment of Atrial Fibrillation); found at:

http://www.ncbi.nlm.nih.gov/pubmed/24887617

were updated for the *Annals of Internal Medicine* publication (Rate- and Rhythm-Control Therapies in Patients with Atrial Fibrillation: A Systematic Review); found at:

http://annals.org/article.aspx?articleid=1877019)

The updated searches yielded a total of **2,168 new** citations. After applying inclusion/exclusion criteria at the title-and-abstract level, **65 new** full-text articles were retrieved and screened. Of these, **47** were excluded at the full-text screening stage, leaving **18 new** articles for data abstraction. These **18 new** articles described **14 new** unique studies.

As a result of adding the 14 new studies, the following changes to SOE ratings were made in what was Table F in the Executive Summary of the AHRQ report (= Table 28 in the main report); the revised table appears as Table 4 (e-only) in the *Annals* publication and is included below for reference:

- A new row was added for "Transcatheter PVI vs. PV Antrum Radial Linear Ablation" to reflect the interventions used in a new included study. The SOE was Insufficient for all outcomes.
- The two comparisons (1) "Surgical Maze vs. Standard of Care (Mitral Valve Surgery) or AADs" and (2) "PVI at the Time of Cardiac Surgery vs. Cardiac Surgery Alone or in Combination with AADs or Catheter Ablation" were combined in a new category called "Surgical Maze (including PVI) vs. Standard of Care (Mitral Valve Surgery) or AADs" to better reflect the overlap of these categories/interventions. The merging of these two comparisons resulted in the following changes to SOE ratings:
    - SOE for Restoration of Sinus Rhythm = High (was Insufficient for old comparison 1 and High for old comparison 2); no new studies added.
    - SOE for Maintenance of Sinus Rhythm = High (was Moderate for old comparison 1 and High for old comparison 2); one heterogeneous study was dropped from the analysis, which increased the consistency of findings.
    - SOE for Stroke = Moderate (was Insufficient for old comparison 1 and Low for old comparison 2); one new, consistent study increased the SOE rating.

**Table 4 (e-only): Summary of strength of evidence and effect estimates for procedural rhythm-control therapies**

| Treatment Comparison | Restoration of Sinus Rhythm | Maintenance of Sinus Rhythm | Recurrence of AF | All-Cause and CV Mortality | CV/AF Hospitalizations | Heart Failure Symptoms/ Control of AF Symptoms | Quality of Life | Stroke (and Mixed Embolic Events Including Stroke) | Bleeding Events |
|---|---|---|---|---|---|---|---|---|---|
| Transcatheter PVI vs. AADs | SOE= Insufficient (No studies) | SOE=High (11 studies, 1458 patients)<br><br>OR 5.87 (95% CI, 3.18 to 10.85) favoring transcatheter PVI | SOE= Insufficient (No studies) | All-Cause: SOE= Insufficient (2 studies, 314 patients)<br><br>Cardiac: SOE= Insufficient (No studies) | CV: SOE= Moderate (2 studies, 268 patients)<br>Both studies demonstrated significant increase in CV hospitalizations in the AAD arm vs. PVI<br><br>AF: SOE= Insufficient (1 study, 67 patients) | SOE= Insufficient (1 study, 245 patients) | SOE= Insufficient (6 studies, 647 patients) | Stroke: SOE= Insufficient (1 study, 245 patients)<br><br>Mixed: SOE= Low (2 studies, 140 patients)<br>No embolic events in either the PVI or AAD arm | SOE= Insufficient (1 study, 67 patients) |

| Treatment Comparison | Restoration of Sinus Rhythm | Maintenance of Sinus Rhythm | Recurrence of AF | All-Cause and CV Mortality | CV/AF Hospitaliza-tions | Heart Failure Symptoms/ Control of AF Symptoms | Quality of Life | Stroke (and Mixed Embolic Events Including Stroke) | Bleeding Events |
|---|---|---|---|---|---|---|---|---|---|
| Transcatheter PVI Using Different Types of Ablation Catheters | SOE= Insufficient (No studies) | SOE=Low (3 studies, 264 patients)<br>No difference between different types of ablation catheters | SOE=Low (1 study, 102 patients)<br>No difference between a multipolar circular ablation catheter and a point-by-point PVI with an irrigated tip ablation catheter (*P*=0.80) | SOE= Insufficient (No studies) | SOE= Insufficient (No studies) | SOE= Insufficient (No studies) | SOE= Insufficient (No studies) | Stroke: SOE= Insufficient (1 study, 82 patients)<br><br>Mixed: SOE= Insufficient (No studies) | SOE= Insufficient (No studies) |
| Transcatheter Circumferential PVI vs. Transcatheter Segmental PVI | SOE= Insufficient (1 study, 80 patients) | SOE=Low (5 studies, 500 patients)<br>OR 1.31 (95% CI, 0.59 to 2.93) demonstrating a potential benefit of circumferential PVI which did not reach statistical significance | SOE= Insufficient (No studies) | All-Cause: SOE=Low (1 study, 110 patients)<br>No events in either arm after 48 months<br><br>Cardiac: SOE= Insufficient (No studies) | SOE= Insufficient (No studies) | SOE= Insufficient (No studies) | SOE= Insufficient (No studies) | SOE= Insufficient (No studies) | SOE= Insufficient (No studies) |

| Treatment Comparison | Restoration of Sinus Rhythm | Maintenance of Sinus Rhythm | Recurrence of AF | All-Cause and CV Mortality | CV/AF Hospitaliza-tions | Heart Failure Symptoms/ Control of AF Symptoms | Quality of Life | Stroke (and Mixed Embolic Events Including Stroke) | Bleeding Events |
|---|---|---|---|---|---|---|---|---|---|
| Transcatheter PVI With CTI Ablation vs. Transcatheter PVI Without CTI Ablation | SOE= Insufficient (No studies) | SOE= Insufficient (No studies) | SOE= Insufficient (3 studies, 467 patients) | SOE= Insufficient (No studies) | SOE= Insufficient (No studies) | SOE= Insufficient (No studies) | SOE= Insufficient (No studies) | SOE= Insufficient (No studies) | SOE= Insufficient (No studies) |
| Transcatheter PVI With CFAE Ablation vs. Transcatheter PVI Without CFAE Ablation | SOE=Low (2 studies, 247 patients) 2 studies showing significant benefit of CFAE arm | SOE=Low (9 studies, 817 patients) showing a potential benefit of CFAE | SOE= Insufficient (No studies) | SOE= Insufficient (No studies) | SOE= Insufficient (No studies) | SOE= Insufficient (No studies) | SOE= Insufficient (1 study, 60 patients) | Stroke: SOE= Low (1 study, 144 patients) No events in any arm after 16 months<br>Mixed: SOE= Insufficient (No studies) | SOE= Insufficient (No studies) |
| Transcatheter PVI vs. PV Antrum Radial Linear Ablation | SOE= Insufficient (No studies) | SOE= Insufficient (1 study, 86 patients) | SOE= Insufficient (1 study, 86 patients) | SOE= Insufficient (No studies) | SOE= Insufficient (No studies) | SOE= Insufficient (No studies) | SOE= Insufficient (No studies) | SOE= Insufficient (No studies) | SOE= Insufficient (No studies) |

| Treatment Comparison | Restoration of Sinus Rhythm | Maintenance of Sinus Rhythm | Recurrence of AF | All-Cause and CV Mortality | CV/AF Hospitaliza-tions | Heart Failure Symptoms/ Control of AF Symptoms | Quality of Life | Stroke (and Mixed Embolic Events Including Stroke) | Bleeding Events |
|---|---|---|---|---|---|---|---|---|---|
| Transcatheter PVI vs. Transcatheter PVI With Additional Ablation Sites Other Than CTI and CFAE and Transcatheter PVI Involving all Four PVs vs. Transcatheter PVI Involving Arrhythmo-genic PVs Only | SOE= Insufficient (2 studies, 384 patients) | SOE= Insufficient (16 studies, 2,133 patients) | SOE= Insufficient (7 studies, 779 patients) | All-Cause: SOE= Insufficient (3 studies, 612 patients)<br><br>Cardiac: SOE= Insufficient (No studies) | SOE= Insufficient (No studies) | SOE= Insufficient (No studies) | SOE=Low (2 studies, 152 patients)<br>No significant difference between arms in 2 studies | Stroke: SOE= Insufficient (3 studies, 568 patients)<br><br>Mixed: SOE= Insufficient (No studies) | SOE= Insufficient (1 study, 207 patients) |
| Transcatheter PVI Alone vs. Transcatheter PVI plus Postablation AADs | SOE= Insufficient (No studies) | SOE= Insufficient (No studies) | SOE= Insufficient (2 studies, 217 patients) | SOE= Insufficient (No studies) | CV: SOE= Insufficient (No studies)<br><br>AF: SOE=Low (1 study, 110 patients)<br>No difference between arms | SOE= Insufficient (No studies) | SOE= Insufficient (No studies) | SOE= Insufficient (No studies) | SOE= Insufficient (No studies) |

| Treatment Comparison | Restoration of Sinus Rhythm | Maintenance of Sinus Rhythm | Recurrence of AF | All-Cause and CV Mortality | CV/AF Hospitaliza-tions | Heart Failure Symptoms/ Control of AF Symptoms | Quality of Life | Stroke (and Mixed Embolic Events Including Stroke) | Bleeding Events |
|---|---|---|---|---|---|---|---|---|---|
| Surgical Maze (including PVI) vs. Standard of Care (Mitral Valve Surgery) or AADs | SOE=High (3 studies, 181 patients) OR 12.30 (95% CI, 1.31 to 115. 29) demonstrating statistically significant benefit of PVI at time of cardiac surgery | SOE=High (8 studies, 632 patients) OR 7.94 (95% CI, 3.63 to 17.36) demonstrating large and significant benefit of Maze | SOE= Insufficient (1 study, 64 patients) | All-cause: SOE=Low (7 studies, 537 patients) OR 1.06 (95% CI, 0.44 to 2.55) demonstrating no difference between groups<br>Cardiac: SOE= Insufficient (1 study, 97 patients) | SOE= Insufficient (No studies) | SOE= Insufficient (2 studies, 254 patients) | SOE= Insufficient (2 studies, 229 patients) | Stroke: SOE= Moderate (3 studies, 456 patients) 5 studies showing no difference between groups<br>Mixed: SOE= Insufficient (1 study, 67 patients) | SOE= Insufficient (3 studies, 325 patients) |