Does left atrial appendage closure reduce stroke rates as well as oral anticoagulants and antiplatelet meds in A-fib patients?

**EVIDENCE-BASED ANSWER**

**A** Yes. Left atrial appendage closure (LAAC) with the Watchman device is noninferior to vitamin K antagonists (VKAs) and non-VKA oral anticoagulants (NOACs) for adults with nonvalvular atrial fibrillation (NVAF) and 1 additional stroke risk factor (strength of recommendation [SOR]: A, multiple meta-analyses). LAAC has consistently been shown to be superior to antiplatelet therapy (SOR: A, single meta-analysis). One randomized controlled trial (RCT) demonstrated superiority of LAAC to VKA (SOR: B, single RCT).

**Evidence summary**

A 2017 network meta-analysis included 19 RCTs and 87,831 patients receiving anticoagulation, antiplatelet therapy, or LAAC for NVAF. LAAC was superior to antiplatelet therapy (hazard ratio [HR]=0.44; 95% confidence interval [CI], 0.23-0.86; P<.05) and similar to NOACs (HR=1.01; 95% CI, 0.53-1.92; P=.969) for reducing risk of stroke.

**LAAC and NOACs found “most effective”**

A network meta-analysis of 21 RCTs, which included data from 96,017 patients, examined the effectiveness of 7 interventions to prevent stroke in patients with NVAF: 4 NOACs, VKA, aspirin, and LAAC; the analysis compared VKA with the other interventions. The 2 trials that investigated LAAC accounted for only 1114 patients.

When the 7 interventions were ranked simultaneously on 2 efficacy outcomes (stroke/systemic embolism and all-cause mortality), all 4 NOACs and LAAC clustered together as “the most effective and lifesaving.”

**Fewer hemorrhagic strokes with LAAC than VKA**

A 2016 meta-analysis of 6 RCTs compared risk of stroke for adults with NVAF who received LAAC, VKA, or NOACs. No significant differences were found between NOACs and VKA or LAAC and VKA. The LAAC group had a significantly smaller number of patients.

A 2015 meta-analysis of 2406 patients with NVAF found that patients who received LAAC had significantly fewer hemorrhagic strokes (HR=0.22; P<.05) than patients who received VKA. No differences in all-cause stroke were found between the 2 groups during an average follow-up of 2.69 years.

**LAAC found superior to warfarin for stroke prevention in one trial**

A 2014 multicenter, randomized study (PROTECT-AF) of 707 patients with NVAF plus 1 additional stroke risk factor compared LAAC with VKA (warfarin). LAAC met criteria at 3.8 years for both noninferiority and superiority in preventing stroke, based on 2.3 events per 100 patient-years compared with 3.8 events per 100 patient-years for VKA.
The number needed to treat with LAAC was 67 to result in 1 less event per patient-year.

A 2014 RCT (PREVAIL) evaluated patients with NVAF plus 1 additional stroke risk factor. LAAC was noninferior to warfarin for ischemic stroke prevention.6

Recommendations
The American College of Cardiology (ACC) recommends LAAC for patients with NVAF who are not candidates for long-term anticoagulation.7 Similarly, the 2016 European Society of Cardiology guidelines issued a Class IIb recommendation for LAAC for stroke prevention in those with contraindications for long-term anticoagulation.8 Lastly, in a 2014 guideline, the American Heart Association, ACC, and the Heart Rhythm Society issued a Class IIb recommendation for surgical excision of the left atrial appendage in patients with atrial fibrillation undergoing cardiac surgery, but did not provide recommendations regarding LAAC.9

References

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