

SYSTEMATIC REVIEW

# Pacing as a Treatment for Reflex-Mediated (Vasovagal, Situational, or Carotid Sinus Hypersensitivity) Syncope: A Systematic Review for the 2017 ACC/AHA/HRS Guideline for the Evaluation and Management of Patients With Syncope



A Report of the American College of Cardiology/American Heart Association  
Task Force on Clinical Practice Guidelines and the Heart Rhythm Society

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## ABSTRACT

**OBJECTIVES** To determine, using systematic review of the biomedical literature, whether pacing reduces risk of recurrent syncope and relevant clinical outcomes among adult patients with reflex-mediated syncope.

**METHODS** MEDLINE (through PubMed), EMBASE, and the Cochrane Central Register of Controlled Trials (through October 7, 2015) were searched for randomized trials and observational studies examining pacing and syncope, and the bibliographies of known systematic reviews were also examined. Studies were rejected for poor-quality study methods and for the lack of the population, intervention, comparator, or outcome(s) of interest.

**RESULTS** Of 3,188 citations reviewed, 10 studies met the inclusion criteria for systematic review, including a total of 676 patients. These included 9 randomized trials and 1 observational study. Of the 10 studies, 4 addressed patients with carotid sinus hypersensitivity, and the remaining 6 addressed vasovagal syncope. Among the 6 open-label (unblinded) studies, we found that pacing was associated with a 70% reduction in recurrent syncope (relative risk [RR]: 0.30; 95% confidence interval [CI]: 0.15–0.60). When the 2 analyzable studies with double-blinded methodology were considered separately, there was no clear benefit (RR: 0.73; 95% CI: 0.25–2.1), but confidence intervals were wide. The strongest evidence was from the randomized, double-blinded ISSUE-3 (Third International Study on Syncope of Uncertain Etiology) trial, which demonstrated a benefit of pacing among patients with recurrent syncope and asystole documented by implantable loop recorder.

**CONCLUSIONS** There are limited data with substantive evidence of outcome ascertainment bias, and only 2 studies with a double-blinded study design have been conducted. The evidence does not support the use of pacing for reflex-mediated syncope beyond patients with recurrent vasovagal syncope and asystole documented by implantable loop recorder.

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