



Cochrane for Clinicians

Putting Evidence into Practice

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This series is coordinated by Corey D. Fogleman, MD, Assistant Medical Editor.

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Effects of Yoga in Patients with Asthma

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Clinical Question

Does yoga improve quality of life and symptoms in patients with asthma?

Evidence-Based Answer

Regular yoga improves quality of life as measured on the Asthma Quality of Life Questionnaire (mean difference = 0.57 units on a seven-point scale; 95% confidence interval [CI], 0.37 to 0.77); improves asthma symptoms (standardized mean difference = 0.37; 95% CI, 0.09 to 0.65); and reduces medication use (relative risk [RR] = 5.35; 95% CI, 1.29 to 22.11). However, the high risk of bias and heterogeneity in the included studies limit firm conclusions about the role of yoga in the care of patients with asthma.¹ (Strength of Recommendation: B, based on inconsistent or limited-quality patient-oriented evidence.)

Practice Pointers

Asthma affects 24.6 million Americans.² In the United States, asthma care costs more than \$12.7 billion annually and is associated with absenteeism costs from \$6 million to \$383 million per state.³ Yoga practice is also prevalent in the United States, with 21 million adult practitioners. Some evidence suggests that yoga may be helpful in improving asthma symptoms and asthma-related quality of life. The authors of this review investigated the effects of yoga on patients with asthma.

This review included 15 randomized controlled trials with 1,048 participants.¹ Yoga improved quality of life by a mean 0.57 units on each item of the seven-point scale on the Asthma Quality of Life Questionnaire (95% CI, 0.37 to 0.77), in which a 0.5-unit change is considered significant. Yoga also improved asthma symptoms (standardized mean difference = 0.37; 95% CI, 0.09 to 0.65), although there is no defined minimal

clinically important difference for the scale used to assess this. Yoga also reduced medication use (RR = 5.35; 95% CI, 1.29 to 22.11); however, the medications assessed varied among studies, and two studies that were not included in the review demonstrated no differences in medication use.

Yoga had a mixed effect on spirometry parameters. It provided no benefit for forced expiratory volume in one second (FEV₁), seemed to improve the peak expiratory flow rate and forced vital capacity (FVC), but had no effect on the FEV₁/FVC ratio. Four of the studies in the review looked at adverse effects but did not find enough information to draw conclusions. The authors noted that, despite significant differences in quality-of-life, symptom, and some spirometry parameters, the high risk of bias and heterogeneity in the included studies limited firm conclusions about the role of yoga in the care of patients with asthma.

Clinical guidelines do not mention yoga in the treatment of asthma. Although the European Respiratory Society/American Thoracic Society clinical practice guidelines discuss obesity, tobacco smoke, and air pollution as lifestyle and environmental factors associated with asthma, they do not include yoga as a treatment option.⁴ The Institute for Clinical Systems Improvement similarly discusses using medications, removing environmental triggers, and raising patient awareness about when asthma symptoms are worsening, but it does not include yoga among its treatment recommendations.⁵ Despite limited evidence supporting its use, yoga has minimal adverse effects and general health benefits, and it can be considered as an adjunct to traditional pharmacotherapy and environmental risk modification in patients with asthma.

The practice recommendations in this activity are available at <http://www.cochrane.org/CD010346>.

The views expressed are the author's and do not reflect the official policy or position of the Uniformed Services University of the Health Sciences, the U.S. Army, the Department of Defense, or the U.S. government.

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Antiplatelet vs. Anticoagulant Therapy for Patients with Heart Failure in Sinus Rhythm

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Clinical Question

For patients with heart failure with reduced ejection fraction in sinus rhythm, is warfarin (Coumadin) therapy superior to aspirin regarding the risk of cardiac events and mortality?

Evidence-Based Answer

Heart failure increases the risk of thrombotic complications, but use of warfarin does not lower all-cause mortality more than aspirin in patients with heart failure with reduced ejection fraction in sinus rhythm. Warfarin lowered the rate of nonfatal cardiovascular events slightly (relative risk [RR] = 0.79; 95% confidence interval [CI], 0.63 to 1.00) but increased the risk of major bleeding complications (RR = 2.00; 95% CI, 1.44 to 2.78).¹ (Strength of Recommendation: B, based on inconsistent or limited-quality patient-oriented evidence.)

Practice Pointers

Heart failure is a clinical syndrome associated with significant morbidity, mortality, and financial burdens. In chronic heart failure, cardiac structural abnormalities set off a cascade of maladaptive compensatory events that can lead to thrombotic complications, including thromboembolism and stroke.² For patients with heart failure in sinus rhythm, evidence-based pharmacologic treatment includes aspirin if atherosclerotic cardiovascular disease (ASCVD) is present.³ A previous Cochrane review by the same authors compared anticoagulation (i.e., warfarin) and placebo in patients with heart failure in sinus rhythm and found that it did not improve mortality or vascular

events.⁴ For the current review, the authors performed a literature search to assess whether warfarin would be beneficial in this subset of patients with heart failure by comparing it with aspirin to decrease all-cause mortality, nonfatal cardiovascular events, and risk of major bleeding.

This Cochrane review included four randomized controlled trials (RCTs) and 3,663 patients.¹ All four studies had a low risk of selection bias and all compared warfarin with 162 mg, 300 mg, or 325 mg of aspirin in patients with clinically defined heart failure (i.e., with reduced left ventricular ejection fraction) in sinus rhythm. The analysis showed that there was no difference in all-cause mortality between warfarin and aspirin (RR = 1.00; 95% CI, 0.89 to 1.13), a consistent finding in all four RCTs. Although warfarin was associated with a non-statistically significant reduction in nonfatal cardiovascular events (e.g., myocardial infarction, stroke, pulmonary embolism; RR = 0.79; 95% CI, 0.63 to 1.00), it also led to a twofold higher risk of major bleeding (typically defined as a decline in hemoglobin level of more than 2 g per dL [20 g per L] or bleeding requiring transfusion; RR = 2.00; 95% CI, 1.44 to 2.78). There are no RCT data comparing non-vitamin K antagonist oral anticoagulants with antiplatelet agents in heart failure with reduced ejection fraction in sinus rhythm.

A trial comparing rivaroxaban (Xarelto) and placebo in patients with heart failure and ASCVD in sinus rhythm is ongoing.⁵ Current guidelines do not suggest a role for anticoagulants in patients with heart failure with reduced ejection fraction in sinus rhythm; aspirin should be used, especially in those with ASCVD.^{3,6} Based on limited-quality evidence, this review confirms that warfarin has no benefit in patients with heart failure with reduced ejection fraction in sinus rhythm.

The practice recommendations in this activity are available at <http://www.cochrane.org/CD003333>.

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