BMJ. 2018 Mar 21;360:k851. doi: 10.1136/bmj.k851.

Effect of tai chi versus aerobic exercise for fibromyalgia: comparative effectiveness randomized controlled trial.

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Abstract

OBJECTIVES:

To determine the effectiveness of tai chi interventions compared with aerobic exercise, a current core standard treatment in patients with fibromyalgia, and to test whether the effectiveness of tai chi depends on its dosage or duration.

DESIGN:

Prospective, randomized, 52 week, single blind comparative effectiveness trial.

SETTING:

Urban tertiary care academic hospital in the United States between March 2012 and September 2016.

PARTICIPANTS:

226 adults with fibromyalgia (as defined by the American College of Rheumatology 1990 and 2010 criteria) were included in the intention to treat analyses: 151 were assigned to one of four tai chi groups and 75 to an aerobic exercise group.

INTERVENTIONS:

Participants were randomly assigned to either supervised aerobic exercise (24 weeks, twice weekly) or one of four classic Yang style supervised tai chi interventions (12 or 24 weeks, once or twice weekly). Participants were followed for 52 weeks. Adherence was rigorously encouraged in person and by telephone.

MAIN OUTCOME MEASURES:

The primary outcome was change in the revised fibromyalgia impact questionnaire (FIQR) scores at 24 weeks compared with baseline. Secondary outcomes included changes of scores in patient's global assessment, anxiety, depression, self efficacy, coping strategies, physical functional performance, functional limitation, sleep, and health related quality of life.

RESULTS:

FIQR scores improved in all five treatment groups, but the combined tai chi groups improved statistically significantly more than the aerobic exercise group in FIQR scores at 24 weeks (difference between groups=5.5 points, 95% confidence interval 0.6 to 10.4, P=0.03) and several secondary outcomes (patient's global assessment=0.9 points, 0.3 to 1.4, P=0.005; anxiety=1.2 points, 0.3 to 2.1, P=0.006; self efficacy=1.0 points, 0.5 to 1.6, P=0.0004; and coping strategies, 2.6 points, 0.8 to 4.3, P=0.005). Tai chi treatment compared with aerobic exercise administered with the same intensity and duration (24 weeks, twice weekly) had greater benefit (between group difference in FIQR scores=16.2 points, 8.7 to 23.6, P<0.001). The groups who received tai chi for 24 weeks showed greater improvements than those who received it for 12 weeks (difference in FIQR scores=9.6 points, 2.6 to 16.6, P=0.007). There was no significant increase in benefit for groups who received tai chi twice weekly compared with once weekly. Participants attended the tai chi training sessions more often than participants attended aerobic exercise. The effects of tai chi were consistent across all instructors. No serious adverse events related to the interventions were reported.

CONCLUSION:

Tai chi mind-body treatment results in similar or greater improvement in symptoms than aerobic exercise, the current most commonly prescribed non-drug treatment, for a variety of outcomes for patients with fibromyalgia. Longer duration of tai chi showed greater improvement. This mind-body approach may be considered a therapeutic option in the multidisciplinary management of fibromyalgia.

TRIAL REGISTRATION:

ClinicalTrials.gov NCT01420640.

PMID:29563100

PMCID:PMC5861462