
Clinical effect of qigong practice on essential hypertension: a meta-analysis of randomized controlled trials

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CRD summary

The review concluded that self-practiced qigong was more effective at decreasing blood pressure for participants with essential hypertension compared to no treatment controls, but qigong was not found to be superior to active controls. Poor reporting of some aspects of the review process and the small sample sizes make the reliability of this conclusion difficult to determine.

Authors' objectives

To evaluate the effectiveness of self-practiced qigong (Chinese meditative exercises) for the treatment of essential hypertension.

Searching

MEDLINE, EMBASE, Cochrane Central Register of Controlled Trials, Ichushi, Traditional Chinese Medical Literature Analysis and Retrieval System (TCMLARS), China Academy of Chinese Medicine, and Qigong and Energy Medicine Database were searched from inception to July 2006, with no language restrictions. Search terms were reported. Experts in the field were also contacted for unpublished or ongoing studies.

Study selection

Randomised controlled trials (RCTs) evaluating the effectiveness of self-practiced qigong alone, or in combination with drugs, for the treatment of essential hypertension were eligible for inclusion. Trials were excluded if: hypertension had not been diagnosed using clear and common criteria; there were insufficient data on blood pressure; there were mistakes in randomisation procedures; or pseudo-randomisations or multiple publications were used, where data for the same group of participants or subgroup, of the same group of participants, was reported more than once. The primary outcomes were systolic blood pressure and diastolic blood pressure.

Various methods of qigong were used in the included trials in comparison with jogging, conventional exercise, Jacobson's progressive muscle relaxation, drugs or waiting list. Duration of qigong ranged from 15 minutes to two hours, with frequency ranging from twice a day to twice a week. Follow-up ranged from eight weeks to one year. The majority of participants in the included trials had mild to moderate essential hypertension stages I and II. Included participants ages ranged from 30 years to more than 70 years, with the proportion of men ranging from 8.3 to 100%.

The authors did not state how papers were selected for the review, or how many reviewers performed the selection.

Assessment of study quality

Validity was assessed using the Jadad scale, together with a customised standard quality assessment scale (maximum score 100) evaluating: method of random sequence generation; concealment of randomisation; standardisation of intervention; compliance control; blinding of outcome assessors; completeness of outcomes reported; dropout rates and intention to treat (ITT) analysis; and adjustment for baseline imbalances.

The authors did not state how the validity assessment was performed.

Data extraction

The mean difference in blood pressure between groups was extracted. Authors of publications were contacted for additional data where necessary.

Data were extracted by one reviewer using a standard form and checked for accuracy by a second reviewer.

Methods of synthesis

An overall-effect was estimated using the weighted mean difference (WMD) and 95% confidence interval (CI) using a random-effects model. Subgroup analysis was conducted by intervention used in treatment and control groups. Statistical heterogeneity was assessed using the χ^2 test. Publication bias was evaluated by visual assessment of a funnel plot.

Results of the review

Nine RCTs (n=908 participants) were included in the review. Quality scores of trials ranged from 24 and 76 points; Jadad scale scores were between 1 and 3 points.

Mean systolic blood pressure: There was a statistically significant decrease in mean systolic blood pressure for qigong alone compared with no treatment (WMD 17.03 mm Hg, 95% CI 11.53 to 22.52; three RCTs, n=130 participants) and for qigong plus drug therapy compared with drug therapy alone (WMD 7.32 mm Hg, 95% CI 0.81 to 13.82; two RCTs, n=243 participants). There was no evidence of heterogeneity for these analyses. There were no statistically significant differences between groups for mean systolic blood pressure for qigong alone compared with drug therapy, qigong alone compared with exercise, or qigong plus drug therapy compared with muscle relaxation exercise and drug therapy.

Mean diastolic blood pressure: There was a statistically significant decrease in mean diastolic blood pressure for qigong alone compared with no treatment (WMD 9.98 mm Hg, 95% CI 2.55 to 17.41; three RCTs, n=130 participants). However, heterogeneity was statistically significant for this analysis (p=0.01). There were no statistically significant differences between groups in mean diastolic blood pressure for qigong alone compared with drug therapy, qigong alone compared with exercise, qigong plus drug therapy compared with drug therapy only, or qigong plus drug therapy compared with muscle relaxation plus drug therapy.

Adverse effects: In one RCT, one woman experienced vestibular neuronitis unrelated to qigong. In another RCT, some participants reported experiencing muscular stiffness after their first qigong session. No other trials reported adverse effects.

Results were also reported for symptom disappearance rate and other effects of qigong.

The funnel plot showed no evidence of publication bias.

Authors' conclusions

Self-practiced qigong was more effective at decreasing blood systolic blood pressure and diastolic blood pressure for participants with essential hypertension compared to no treatment controls, but qigong was not found to be superior to active controls.

CRD commentary

Inclusion criteria were clearly defined in terms of intervention, outcomes, and study design, and were clearly but broadly defined in terms of participants. Several relevant sources were searched with no language restrictions. Some efforts were made to minimise publication bias; appropriate methods were used to assess publication bias presence and no evidence of was found. Methods were used to minimise reviewer errors and bias in extraction of data, but it was not clear whether similar steps were taken in study selection, or validity assessment. Validity was assessed using established checklists; results of the assessment were reported. Results of the overall meta-analysis were declared invalid by the authors due to the considerable differences between trials, so results of subgroup meta-analyses were reported. The analyses seemed appropriate and statistical heterogeneity was assessed. The poor reporting of some aspects of the review process, including the validity assessment and the small sample sizes, make the reliability of the authors' conclusion difficult to determine.

Implications of the review for practice and research

Practice: The authors did not state any implications for practice.

Research: The authors stated that future research of high methodological quality is needed to evaluate which type of qigong method is best for hypertension. In addition, future studies should control for exercise as a potential confounder,

as well as adjunct treatment and medication use; they should report data on adherence to treatment, and they should measure dose-response effect. Instruction and supervision of interventions are needed to ensure compliance and success. Future studies should recruit representative populations including adequate sample size and variance of hypertension participants, they should blind outcome assessors, and they should use questionnaire items relating to lifestyle, personality and belief in qigong. Outcome measures should include symptom improvement, quality of life measures, and record cardiovascular events and mortality. The duration of follow-up should be longer than one year.

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Other publications of related interest

Lee MS, Pittler MH, Guo R, Ernst E. Qigong for hypertension: a systematic review of randomized clinical trials. *Journal of Hypertension* 2007;25(8):1525-1532.

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This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.