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Appraisal

Critically Appraised Papers

Similar benefits from Tai Chi and supervised physiotherapy for knee osteoarthritis

Synopsis

Summary of: Wang C, Schmid CH, Iversen MD, Harvey WF, Fielding RA, Driban JB, et al. Comparative effectiveness of Tai Chi versus physical therapy for knee osteoarthritis: A randomized trial. *Ann Intern Med*. 2016;165(2):77-86.

Question: In people with knee osteoarthritis, what is the comparative effectiveness of a guideline-based physiotherapy regimen compared to Tai Chi? ***Design***: Randomised, controlled trial with concealed allocation. ***Setting***: A tertiary care academic hospital in Boston, USA. ***Participants***: Both men and women were included if they were aged $\geq$ 40 years; met the American College of Rheumatology criteria for symptomatic knee osteoarthritis and radiographic evidence of tibiofemoral or patellofemoral osteoarthritis; had a score of $\geq$ 40 on at least one of the five questions in the Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) pain subscale, which ranges from 0 (best) to 100 (worst). Randomisation of 204 participants allocated 98 to the physiotherapy group and 106 to the Tai Chi group. ***Interventions***: Tai Chi consisted of two 60-minute supervised group sessions per week for 12 weeks. The physiotherapy regimen consisted of two 30-minute individual outpatient sessions per week for 6 weeks followed by 6 weeks of home exercise, which was monitored weekly by telephone. Physiotherapy followed the Osteoarthritis Research Society International (OARSI) guidelines for non-surgical management of knee osteoarthritis, and addressed specific treatment goals developed collaboratively with the participant. Both groups received information about the importance of physical activity and were instructed to continue the exercises they were allocated to after the intervention period. ***Outcome measures***: The primary patient-reported outcome was change in the WOMAC pain subscale score between baseline and 12 weeks. Secondary outcomes included: physical function, stiffness, patient global assessment, depression, walk tests and health-related quality of life at 12, 24 and 52 weeks. ***Results***: A total of 176 participants (82%) completed the 12-week follow-up, and 153 (75%) and 141 (69%) completed the 24-week and 52-week follow-up, respectively. The mean difference in WOMAC pain at 12 weeks was 24 points (95% CI −10 to 58). Both groups showed similar improvements in most secondary outcomes at 12 weeks and in all outcomes at 24 and 52 weeks. ***Conclusion***: Tai Chi delivered in a group and guideline-based physiotherapy delivered to individuals produced similar effects in the treatment of knee osteoarthritis.

Provenance: Invited. Not peer reviewed.

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Commentary

Patients with knee osteoarthritis are recommended to exercise to deal with pain and disability, and are commonly referred to physiotherapy for help and guidance. Wang et al evaluated two different exercise interventions in their study: Tai Chi and physiotherapy. Although previous studies have documented beneficial effects of exercises in this patient group, there is no consensus regarding what type and dose of exercises are the most efficient.[1] In patients with other long-term knee pain diagnoses, such as patellofemoral pain, there has been documented dose-response effects of exercises, ie, higher volume (repetitions and duration) has proven to be most efficient regarding pain and functional outcomes.[2,3]

Wang et al concluded that Tai Chi and physiotherapy were equally effective in patients with knee osteoarthritis. However, the authors did not discuss the substantial difference in treatment/exercise dose between the intervention groups. Although the Tai Chi was delivered in group sessions, the participants in this group were prescribed four times more supervised exercises/training (1440 minutes) than those randomised to individual physiotherapy (360 minutes). As the improvements in both groups are probably related to dose-response mechanisms, the difference in supervised exercise dose between the two intervention groups should be taken into account when evaluating outcomes and cost-effectiveness.

Nevertheless, the Tai Chi group demonstrated greater improvement in depression and in one component of quality of life. This is of note, as such aspects might be crucial for long-term health and wellbeing.[4] In this regard, Wang et al have shed light on possible important mechanisms in treating knee osteoarthritis. Tai Chi emphasises systematic body-mind awareness with intended presence in the movements, which might itself have beneficial health impacts.[5]

In sum, the major difference in exercise dosage between the two exercise interventions that have been evaluated in the study by Wang et al should be taken into account when interpreting how the results from this study may be applied to clinical practice.

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