Manual therapy is more efficient than exercise therapy for osteoarthritis of the hip

Synopsis


Question What is the effect of manual therapy or exercise therapy in patients with osteoarthritis of the hip? Design Randomised controlled trial with concealed allocation, assessor blinding and intention to treat analysis. Setting Outpatient clinic in The Netherlands. Patients 109 patients were included in this study. Criteria were limited flexion, internal rotation with pain, and morning stiffness lasting more than 60 minutes. Fifty-six patients were assigned to the manual therapy group and 53 to the exercise group. Interventions Both groups participated in 25-minute sessions twice a week for nine weeks. For the manual therapy group, techniques were: stretching six peri-articular muscles (10–15 minutes), and traction on the hip joint in different positions. For the exercise group, techniques were: improvement of muscle function (strength exercises for deficient muscles, endurance treadmill exercises, co-ordination exercises to stimulate balance function), and active or passive motion of the hip in different sectors. Lifestyle education was provided for both groups. Outcomes Outcomes were assessed at baseline and 5, 17, and 29 weeks. The primary outcome was patient-assessed recovery measured on a 6 point scale, in analysis dichotomised to (i) improved or (ii) stable or worse. Other outcomes included quality of life measured by the SF-36, function measured with the Harris hip score, and a walking test. Main results Six patients were lost to follow-up at five weeks, and 21 at 29 weeks. Nine patients in each group underwent hip surgery. At five weeks, 81% of subjects in the manual therapy group considered themselves improved versus 50% in the exercise group. Odds ratio for improvement was 1.92 (95%CI 1.30 to 2.60). Manual therapy was more effective in improving function as measured by the Harris score (week 5, 17, and 29), walking speed (weeks 5 and 17), and SF-36 physical function (week 5); all p < 0.05. Conclusion Manual therapy (stretching and traction) has a greater effect than exercise therapy (muscle rehabilitation, passive or active motion) on osteoarthritis of the hip.

Commentary

Level of evidence has been a stumbling block for manual techniques. The efficacy of manipulative therapy has been questioned by the scientific community. While systematic reviews have concluded that manipulative therapy is effective for spinal pain, clinical trials evaluating manipulative therapy for other conditions are uncommon.

The current study is a welcome addition to the medical literature. The study tested the view that manual therapy treatment of soft tissues benefits patients with degenerative hip disease. This study by Hoeksma and colleagues is exceptional in its rigorous methodology, not often seen in the rehabilitation literature. Accordingly the study provides strong evidence that manual therapy is more effective than exercise for patients with osteoarthritis of the hip.

The use of manual therapies directed to the peri-articular soft tissues should be a part of the treatment of patients with hip osteoarthritis. It is regrettable that not all patients are given the opportunity to benefit from its effects. This is all the more true since these results can be obtained with a limited number of sessions (n = 9), with sustained effects as has been demonstrated by Hoeksma et al. In France application of joint distraction techniques using femoral traction is part of the basic arsenal of manual physical therapy for the hip (Hignet 1993). However in the Netherlands not all physical therapists have fundamental training in hip therapy using the manual techniques described in this article.

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Reference
Warm-up exercise prevents acute knee and ankle injuries in young handball players

Synopsis


Question What is the effect of a structured warm-up program for reducing knee and ankle injuries in young people participating in sport? Design Cluster randomised controlled trial, with clubs as the unit of randomisation. Setting 120 handball club teams in Norway. Patients 1837 players (1586 female, 251 male), aged 15–17 years. Interventions A structured warm-up program to improve running, cutting, and landing technique as well as neuromuscular control, balance, and strength used at the beginning of every training session for 15 consecutive sessions and then once a week during the rest of the eight-month season. Each club received one visit from an instructor and they received an exercise book, five wobble boards, and five balance mats. The main focus of the program was to improve awareness and control of knee and ankle by use of equipment. The program included four sets of exercises: warm-up exercises, technique, balance, and strength and power. The players were instructed to spend 4–5 minutes on each exercise group for a total duration of 15–20 minutes. The instructor did one follow-up visit midway through the season. Outcomes Primary outcome was rate of acute injuries to the knee or ankle. Secondary outcomes were any injury to the lower limb and overall injuries. Injuries were recorded by 10 physiotherapists blinded to group allocation. Result 13% of the clubs in the intervention group did not use the program, whereas 22% of the clubs in the control group used specific warm-up exercises to prevent injuries during the study period. During the eight month season 14% of the 1837 players had an injury. The intervention group had significantly fewer acute knee and ankle injuries, 4.8% of subjects experienced injuries in the intervention group versus 8.6% in the control group (relative risk 0.53, 95% CI 0.35 to 0.81, number needed to treat (NNT) = 26. Injuries overall and upper limb injuries were also lower in the intervention group (NNT for all injuries = 11, NNT for upper limb injuries = 38). Conclusion A structured warm-up exercise program focusing on awareness and control of knees and ankle prevented acute knee and ankle injuries in young team handball players.

Commentary

Through a long term research program on injury prevention Oslo Sports Trauma Research Centre has published several high quality studies. In this large study, lower limb injuries were reduced by more than 50% in the exercise group. As pointed out in a letter responding to this article (Webborn 2005) we do not know whether the results can be transferred to other sports, and there might be seasonal variations. The intervention focused on handball-specific exercises, but they are also exercises that are important for other athletes to improve performance. Awareness and control of hips, knees, and ankles during activities has been shown to be vital for knee joint loading. But we still don’t know what exercises are the most important for injury prevention: is it just the awareness part of the program or is it the combination of all exercises? Until we know we should motivate players to use this program and implement it in all pivoting sports to prevent knee injuries and long-term knee degeneration. The program seems to be easy to organise and does not require costly equipment. Therefore the program is applicable to a large population. The study contributes significant new knowledge. However, the most important question is how these findings can be implemented in programs for team handball players in the years to come. Compliance is a key point in studies measuring effects of exercise programs. This study adds to existing knowledge that supervision and coach involvement is crucial to achieve high compliance. Clubs, coaches, players, and medical teams should be made aware of these results and implement the programme as an integrated part of everyday training. Teaching activities and dissemination of the results through collaboration with the different federations will be important to achieve this.

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Reference