



EJPRM systematic continuous update on Cochrane reviews in rehabilitation: news from April 2011 to July 2011

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Background. Since the number of publications about rehabilitation has been increasing over the years, there is necessity for reviews to have a more complete overlook of the evidence. The Cochrane Collaboration provides high quality reviews from which we can draw the most reliable clinical indications. Since 2007 EJPRM lists and presents systematically all these reviews.

Aim. The aim of the present paper was to systematically review all the new rehabilitation papers published from April 2011 up to July 2011 by the Cochrane Library in order to provide physicians involved in the field a summary with the best evidence nowadays available.

Methods. The authors systematically searched all the new papers of rehabilitative interest published from February 2, 2011 to April 22, 2011 in the Cochrane Library. The retrieved papers have been then divided in subgroups according to their topic and the Cochrane Groups.

Results. The number of included papers was 8 (7 new reviews and 1 update review). A synthesis of abstracts is presented.

Conclusion. The increased number of publication created a new need, the need of synthesising results to overcome conflicting evidence. The Cochrane Collaboration has been working on this aspect for many years, and its reviews, being systematic, are really relevant for professional update and to improve clinical practice. This article provides an overview of the most recent papers published in the Cochrane Library to help physiatrists and rehabilitation experts to be up to date.

KEY WORDS: Rehabilitation - Reviews - Evidence based medicine.

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Knowledge and papers about rehabilitation topics have increased quite quickly in the last years. Sometimes results are discordant, others are based on small populations, thus limiting the strength of the findings. The best way to obviate these problems and to synthesize results drawing clinical indications is to perform systematic reviews on high interest topic. This is the main aim of the Cochrane Collaboration, so that today the Cochrane reviews are considered the most reliable instruments of synthesis. In order to present our readers the best available evidence in the field of rehabilitation, we continuously perform systematic reviews of the articles regularly published in the Cochrane Library.

This article presents to readers a list of papers of rehabilitative interest, systematically searched and reviewed, published from April 12 to July 13, 2011 in the Cochrane Library.

Methods

The authors systematically searched all the new papers of rehabilitative interest in the 2nd of February 2011 to the 22nd of April 2011 in the Cochrane Library. The retrieved papers have been then divided in subgroups according to the topic and the Cochrane Groups. Appendix 1 is a list of all the existing systematic reviews of rehabilitation inter-

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est updated after its last publication:¹ all new papers have been added to the list of Cochrane reviews of PRM interest, while the withdrawn reviews have been cancelled, but will be omitted from the present publication and presented once per year from now on.

Results

The number of included papers was 8 (7 new reviews and 1 updated review). Two reviews deal with neurological rehabilitation, namely stroke, two with injuries, one with cardiac rehabilitation and one with developmental age rehabilitation.

The reviews have been divided according to the topic and the Cochrane Groups, the abstracts of the original articles have been included so to assess the main findings and authors' conclusions.

New reviews

Cardiac rehabilitation, Cochrane Heart Group

EXERCISE-BASED CARDIAC REHABILITATION FOR CORONARY HEART DISEASE ²

"This systematic review has allowed analysis of 47 studies randomising 10,794 patients to exercise-based cardiac rehabilitation or usual care. In medium to longer term (*i.e.*, 12 or more months follow-up) exercise-based cardiac rehabilitation reduced overall and cardiovascular mortality (RR 0.87 [95% CI 0.75, 0.99] and 0.74 [95% CI 0.63, 0.87], respectively), and hospital admissions (RR 0.69 [95% CI 0.51, 0.93]) in the shorter term (<12 months follow-up) with no evidence of heterogeneity of effect across trials. Cardiac rehabilitation did not reduce the risk of total myocardial infarction (MI), coronary artery bypass graft (CABG) or percutaneous transluminal coronary angioplasty (PTCA). Given both the heterogeneity in outcome measures and methods of reporting findings, a meta-analysis was not undertaken for health-related quality of life. In seven out of 10 trials reporting health-related quality of life using validated measures there was evidence of a significantly higher level of quality of life with exercise-based cardiac rehabilitation than usual care.

Exercise-based cardiac rehabilitation is effective in reducing total and cardiovascular mortality (in medium to longer term studies) and hospital admissions (in shorter term studies) but not total MI or revascularisation (CABG or PTCA). Despite inclusion of more recent trials, the population studied in this review is still predominantly male, middle aged and low risk. Therefore, well-designed, and adequately reported RCTs in groups of coronary heart disease patients more representative of usual clinical practice are still needed. These trials should include validated health-related quality of life outcome measures, need to explicitly report clinical events including hospital admission, and assess costs and cost-effectiveness".²

Developmental age rehabilitation, Cochrane Developmental, Psychosocial and Learning Problems Group

ACUPUNCTURE FOR ATTENTION DEFICIT HYPERACTIVITY DISORDER (ADHD) IN CHILDREN AND ADOLESCENTS ³

"No studies met the inclusion criteria for this review.

A comprehensive search showed that there is no evidence base of randomised or quasi-randomised controlled trials to support the use of acupuncture as a treatment for ADHD in children and adolescents. Due to the lack of trials, we cannot reach any conclusions about the efficacy and safety of acupuncture for ADHD in children and adolescents. This review highlights the need for further research in this area in the form of high quality, large scale, randomised controlled trials".³

Injuries rehabilitation, Cochrane Bone, Joint and Muscle Trauma Group

INTERVENTIONS FOR PREVENTING LOWER LIMB SOFT-TISSUE RUNNING INJURIES ⁴

"We included 25 trials (30252 participants). Participants were military recruits (19 trials), runners from the general population (three trials), soccer referees (one trial), and prisoners (two trials). The interventions tested in the included trials fell into four main preventive strategies: exercises, modification of training schedules, use of orthoses, and footwear and socks. All 25 included trials were

judged as 'unclear' or 'high' risk of bias for at least one of the four domains listed above. We found no evidence that stretching reduces lower limb soft-tissue injuries (6 trials; 5130 participants; risk ratio [RR] 0.85, 95% confidence interval [95% CI] 0.65 to 1.12). As with all non-significant results, this is compatible with either a reduction or an increase in soft-tissue injuries. We found no evidence to support a training regimen of conditioning exercises to improve strength, flexibility and coordination (one trial; 1020 participants; RR 1.20, 95% CI 0.77 to 1.87). We found no evidence that a longer, more gradual increase in training reduces injuries in novice runners (one trial; 486 participants; RR 1.02, 95% CI 0.72 to 1.45). There was some evidence from a poor quality trial that additional training resulted in a significant increase in the number of naval recruits with shin splints (one trial; 1670 participants; RR 2.02, 95% CI 1.11 to 3.70). There was limited evidence that injuries were less frequent in prisoners when running duration (one trial; 69 participants; RR 0.41, 95% CI 0.21 to 0.79) or frequency (one trial; 58 participants; RR 0.19, 95% CI 0.06 to 0.66) were reduced. Patellofemoral braces appear to be effective for preventing anterior knee pain (two trials; 227 participants; RR 0.41, 95% CI 0.24 to 0.67). Custom-made biomechanical insoles may be more effective than no insoles for reducing shin splints (medial tibial stress syndrome) in military recruits (one trial; 146 participants; RR 0.24, 95% CI 0.08 to 0.69). We found no evidence in military recruits that wearing running shoes based on foot shape, rather than standard running shoes, significantly reduced rate of running injuries (2 trials; 5795 participants; Rate Ratio 1.03, 95% CI 0.93 to 1.14).

Overall, the evidence base for the effectiveness of interventions to reduce soft-tissue injury after intensive running is very weak, with few trials at low risk of bias. More well-designed and reported RCTs are needed that test interventions in recreational and competitive runners".⁴

Injuries rehabilitation, Cochrane Injuries Group

ACUPUNCTURE FOR ACUTE MANAGEMENT AND REHABILITATION OF TRAUMATIC BRAIN INJURY ⁵

"Four RCTs, including 294 participants, reported outcomes specified by this review. Three investigat-

ed electro-acupuncture for TBI while one investigated acupuncture for acute TBI. The results seem to suggest that acupuncture is efficacious for these indications, however the low methodological quality of these studies renders the results questionable. No adverse effects of acupuncture were reported in any of the studies.

The low methodological quality of the included studies does not allow us to make conclusive judgments on the efficacy and safety of acupuncture in either the acute treatment and/or rehabilitation of TBI. Its beneficial role for these indications remains uncertain. Further research with high quality trials is required".⁵

Neck Pain Rehabilitation, Cochrane Back Group

WORKPLACE INTERVENTIONS FOR NECK PAIN IN WORKERS ⁶

"We identified 1995 references and included 10 RCTs (2745 workers). Two studies were assessed with low risk of bias. Most trials (N = 8) examined office workers. Few workers were sick-listed. Thus, Workplace interventions (WIs) were seldom designed to improve return-to-work. Overall, there was low quality evidence that showed no significant differences between WIs and no intervention for pain prevalence or severity. If present, significant results in favour of WIs were not sustained across follow-up times. There was moderate quality evidence (1 study, 415 workers) that a four-component WI was significantly more effective in reducing sick leave in the intermediate-term (OR 0.56, 95% CI 0.33 to 0.95), but not in the short- (OR 0.83, 95% CI 0.52 to 1.34) or long-term (OR 1.28, 95% CI 0.73 to 2.26). These findings might be because only a small proportion of the workers were sick-listed.

Overall, this review found low quality evidence that neither supported nor refuted the benefits of any specific WI for pain relief and moderate quality evidence that a multiple-component intervention reduced sickness absence in the intermediate-term, which was not sustained over time. Further research is very likely to have an important impact on our confidence in the estimate of effect and is likely to change the estimate. There is an urgent need for high quality RCTs with well designed WIs".⁶

Stroke rehabilitation, Cochrane Stroke Group

HANDS-ON THERAPY INTERVENTIONS FOR UPPER LIMB MOTOR DYSFUNCTION FOLLOWING STROKE ⁷

“Following completion of the searches, two review authors independently assessed the trials and extracted data using a data extraction pro forma. The same two review authors independently recorded and documented the methodological quality of the trials.

Three studies, involving a total of 86 participants, met all the selection criteria and were included in the review. However, extreme levels of heterogeneity were evident. Therefore, we could not undertake a meta-analysis of the results and completed a narrative synthesis instead.

Overall, the review demonstrated that the limited evidence of benefit of stretching, passive exercises and mobilization, when applied to the hemiplegic upper limb following stroke, merits further research”.⁷

MENTAL PRACTICE FOR TREATING UPPER EXTREMITY DEFICITS IN INDIVIDUALS WITH HEMIPARESIS AFTER STROKE ⁸

“We included six studies involving 119 participants. We combined studies that evaluated MP in addition to another treatment versus the other treatment alone. Mental practice in combination with other treatment appears more effective in improving upper extremity function than the other treatment alone (Z=3.48, P=0.0005; standardised mean difference [SMD] 1.37; 95% confidence interval [CI] 0.60 to 2.15). We attempted subgroup analyses, based on time since stroke and dosage of MP; however, numbers in each group were small. We evaluated the quality of the evidence with the PEDro scale, ranging from 6 to 9 out of 10; we determined the GRADE score to be moderate.

There is limited evidence to suggest that mental practice (MP) in combination with other rehabilitation treatment appears to be beneficial in improving upper extremity function after stroke, as compared with other rehabilitation treatment without MP. Evidence regarding improvement in motor recovery and quality of movement is less clear. There is no clear pattern regarding the ideal dosage of MP required to improve outcomes. Further studies are required to evaluate the effect of MP on time post stroke,

volume of MP that is required to affect the outcomes and whether improvement is maintained long-term. Numerous large ongoing studies will soon improve the evidence base”.⁸

Update

Musculoskeletal rehabilitation, Bone, Joint and Muscle Trauma Group

THERAPEUTIC ULTRASOUND FOR ACUTE ANKLE SPRAINS ⁹

“Six trials were included, involving 606 participants. Five trials included comparisons of ultrasound therapy with sham ultrasound; and three trials included single comparisons of ultrasound with three other treatments. The assessment of risk of bias was hampered by poor reporting of trial methods and results. None of the five placebo-controlled trials (sham ultrasound) demonstrated statistically significant differences between true and sham ultrasound therapy for any outcome measure at one to four weeks of follow-up. The pooled risk ratio for general improvement at one week was 1.04 (random-effects model, 95% confidence interval 0.92 to 1.17) for active *versus* sham ultrasound. The differences between intervention groups were generally small, between zero and six per cent, for most dichotomous outcomes.

The evidence from the five small placebo-controlled trials included in this review does not support the use of ultrasound in the treatment of acute ankle sprains. The potential treatment effects of ultrasound appear to be generally small and of probably of limited clinical importance, especially in the context of the usually short-term recovery period for these injuries. However, the available evidence is insufficient to rule out the possibility that there is an optimal dosage schedule for ultrasound therapy that may be of benefit”.⁹

Conclusions

The increased number of publication created a new need, the need of synthesising results to overcome conflicting evidence. The Cochrane Collaboration works on this since many years, and its reviews, being systematic, a really relevant for professional update and to improve the clinical practice. This ar-

title provides an overview of the most recent papers appeared in the Cochrane Library to help physiatrist and rehabilitation experts to be up to date.

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