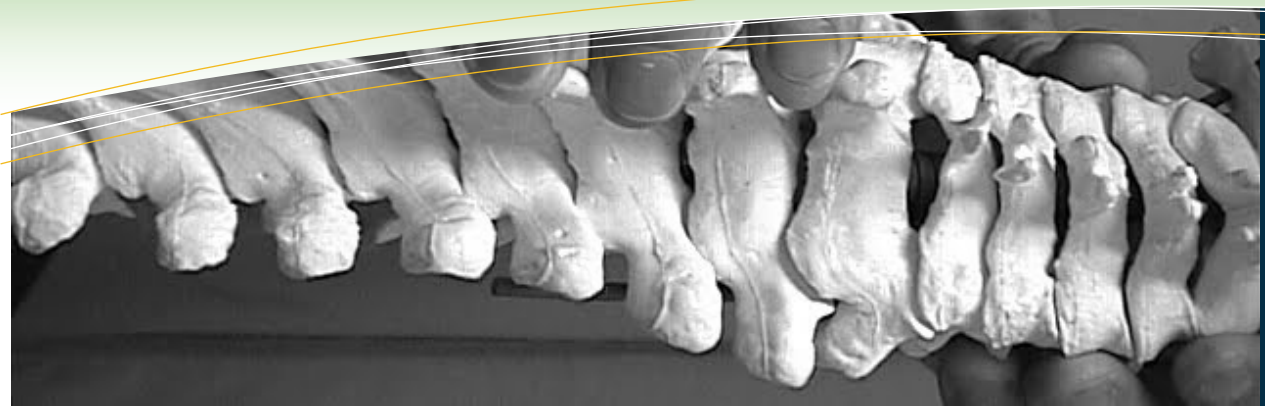
Manual Therapy Research Review



ISSUE 8
August 2015

This issue:

Welcome

In this edition of research review I cover papers related to the best practice management of patella femoral pain, exercise regimes for Achilles tendinopathy, evidence for cost effective treatment for lateral epicondylagia with physiotherapy, and an excellent editorial piece by Peter O'Sullivan on low back pain. Enjoy! Duncan

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Paper One

Barton CJ, Lack S, Hemmings S, Tufail, S and Morrissey, D. The 'Best Practice Guide to Conservative Management of Patellofemoral Pain': Incorporating level 1 evidence with expert clinical reasoning (2015). British Journal of Sports Medicine, 49, 923–934

Study Design: Mixed methods
Objectives: Develop a comprehensive contemporary guide to conservative management of Patello Femoral Pain (PFP) outlining key considerations for clinicians to follow.
Methods: The researchers synthesised the findings from six high quality systematic reviews to September 2013 with the opinions of 17 experts obtained via semi-structured interviews. Experts had at least 5 years clinical experience with PFP as a specialist focus, were actively involved in PFP research and contributed to specialist international meetings. The interviews covered clinical reasoning perception of current evidence and research priorities.
Results: Multimodal intervention including exercise to strengthen the gluteal and quadriceps musculature, manual therapy and taping of the patella possessed the strongest evidence.
Evidence also supports use of foot orthoses and acupuncture.
Four key over-arching principles to ensure effective management included—
(1) PFP is a multifactorial condition requiring an individually tailored multimodal approach.
(2) Immediate pain relief should be a priority to gain patient trust.
(3) Patient empowerment by emphasising active over passive interventions is important.
(4) Good patient education and activity modification is essential.
Conclusion: Effective management of PFP requires consideration of a number of proven conservative interventions. An individually tailored multimodal intervention programme including gluteal and quadriceps strengthening, patellar taping and an emphasis on education and activity modification should be prescribed for patients with PFP.
Commentary: This is a great paper to summarise the current best practice for PFP. There is a summary table of the best evidence practice (Table 1) and this will be of value to clinicians. It is nice to have these 'sounds bites' of knowledge that help clinical decision making from the experts (clinician/researchers) dealing with these types of conditions. The review also reinforces the fact that treatment needs to be multimodal, but clearly tailored to the individual based on the multifactorial presentation of PFP. It is also indicates that six to eight weeks of care should see significant improvements when compared to placebo of control groups.

Paper Two

Beyer,R,., Konsgaard, M., Kjaer,B., Øhlenschlæger, T., Kjaer, M and Magnusson, S.et al (2015). Heavy Slow Resistance Versus Eccentric Training as Treatment for Achilles Tendinopathy. The American Journal of Sports Medicine, 43, No.7 1704 -1711 DOI: 10.1177/036354651558476

Background: Previous studies have shown that eccentric training has a positive effect on achilles tendinopathy, but few randomized controlled trials have compared it with other loading-based treatment regimens.
Purpose: To evaluate the effectiveness of eccentric training (ECC) and heavy slow resistance training (HSR) among patients with mid-portion Achilles tendinopathy.
Study Design: Randomised controlled trial; Level of evidence, 1.
Methods: A total of 58 patients with chronic (>3 months) mid portion Achilles tendinopathy were randomised to ECC or HSR for 12 weeks. Function and symptoms (Victorian Institute of Sports Assessment-Achilles), tendon pain during activity (visual analog scale), tendon swelling, tendon neovascularization, and treatment satisfaction were assessed at 0 and 12 weeks and at the 52-week follow-up. Analyses were performed on an intention-to-treat basis.
Results: Both groups showed significant ($P < .0001$) improvements in Victorian Institute of Sports Assessment-Achilles and visual analog scale from 0 to 12 weeks, and these improvements were maintained at the 52-week follow-up. Concomitant with the clinical improvement, there was a significant reduction in tendon thickness and neovascularization. None of these robust clinical and structural improvements differed between the ECC and HSR groups. However, patient satisfaction tended to be greater after 12 weeks with HSR (100%) than with ECC (80%; $P = .052$) but not after 52 weeks (HSR, 96%; ECC, 76%; $P = .10$). The mean training session compliance rate was 78% in the ECC group and 92% in the HSR group, with a significant difference between groups ($P < .005$).
Conclusion: The results of this study show that both traditional ECC and HSR yield positive, equally good, lasting clinical results in patients with achilles tendinopathy and that the latter tends to be associated with greater patient satisfaction after 12 weeks but not after 52 weeks.
Commentary: This is a study that has been long overdue in my view. The ability to change the loading parameters on the tendon to be more reflective of true strengthening programmes has often been lacking in the Achilles programmes and clinicians have stuck rigidly to the 3 x 15 protocol. This study has a progressive heavy slow resistance (HSR) programme as follows: The number of repetitions decreased, and load gradually increased, every week as the tendon got stronger. The repetitions and loads were as follows: 3 times, 15-repetition maximum (15RM), in week 1; 3 times, 12RM, in weeks 2 to 3; 4 times, 10RM, in weeks 4 to 5; 4 times, 8RM, in weeks 6 to 8; and 4 times, 6RM, in weeks 9 to 12. All exercises were performed in the full range of motion of the ankle joint, and patients were instructed to spend 3 seconds completing each eccentric and concentric phase (ie, 6 seconds per repetition). This looks like a really good strength programme with appropriate load and repetition progressions. The results of the paper yield similar improvements in pain and tendon quality but the HSR group have greater patient satisfaction than the eccentric only group. Whilst the authors are not sure why there is greater satisfaction with the HSR group I suspect a variation in exercise and the ability to combine eccentric and concentric exercises help with compliance. This is a great study of a high quality that should change clinical practice!!

Paper Three

Coombes, B., Connelly, L., Bissett, L., and Vincenzino, B. (2015). Economic evaluation favours physiotherapy but not corticosteroid injection as a first-line intervention for chronic lateral epicondylalgia: evidence from a randomised clinical trial. British Journal of Sports Medicine, 0:1–7. doi:10.1136/bjsports-2015-094729

Aim: To determine the cost-effectiveness of corticosteroid injection, physiotherapy and a combination of these interventions, compared to a reference group receiving a blinded placebo injection.
Methods: 165 adults with unilateral lateral epicondylalgia of longer than 6 weeks duration from Brisbane, Australia, were randomised for concealed allocation to saline injection (placebo), corticosteroid injection, saline injection plus physiotherapy (eight sessions of elbow manipulation and exercise) or corticosteroid injection plus physiotherapy. Costs to society and health-related quality of life (estimated by EuroQol-5D) over the 1 year follow-up were used to generate incremental cost per quality-adjusted life year (QALY) ratios for each intervention relative to placebo.
Results: Physiotherapy was more costly, but was the only intervention that produced a statistically significant improvement in quality of life relative to placebo (MD, 95% CI 0.035, 0.003to 0.068). Similar cost/QALY ratios were found for physiotherapy ($A29, 343; GBP18,962) and corticosteroid injection ($A31,750; GBP20,518); however, the probability of being more cost-effective than placebo at values above $A50 000 per quality-adjusted life year was 81% for physiotherapy and 53% for corticosteroid injection. Cost/QALY was far greater for a combination of corticosteroid injection and physiotherapy ($A228,000; GBP147,340).

Summary: Physiotherapy was a cost-effective treatment for lateral epicondylalgia. Corticosteroid injection was associated with greater variability, and a lower probability of being cost-effective if a willingness to pay threshold of $A50 000 is assumed. A combination of corticosteroid injection and physiotherapy was ineffective and cost-ineffective. Physiotherapy, not corticosteroid injection, should be considered as a first -line intervention for lateral epicondylalgia.

Commentary: This is another great study from Bill Vincenzino and his research group in Brisbane into the management of chronic tennis elbow. In this study the physiotherapy intervention was as follows: Participants received eight 30 min sessions of treatment from one of the 11 postgraduate physiotherapists. Treatment was individually prescribed based on a standardised protocol including manual therapy techniques (MWM) at the elbow with gripping, concentric and eccentric wrist extension exercises, motor control retraining and global upper body strengthening. Each participant was asked to complete a daily home exercise programme, which was reviewed by the physiotherapist at the start of each session to monitor compliance and to progress the programme. This treatment was compared with cortisone injection, placebo or a combination of cortisone and physiotherapy. The results clearly show that physiotherapy is not only the most clinically effective but also the most cost effective treatment. Yet again more ammunition that funders should look to physiotherapy first, in particular manual therapy!!

Paper Four

O'Sullivan, P. (2015). Common misconceptions about back pain in sport: Tiger Woods'case brings five fundamental questions into sharp focus. British Journal of Sports Medicine, 49 (14), 906-907

Commentary

This excellent editorial piece from Peter O'Sullivan is worth a read. It will not be news to many therapists but this would be a great piece to leave in the waiting room for patients to read. Peter discusses the words the media and Tiger Woods uses when discussing his on-going low back pain. Peter makes comments on statements like:

- "Tiger has a pinched nerve in his back causing his pain". What is the role of imaging for the diagnosis of back pain?
- "Tiger had a micro-discectomy for a pinched nerve that had produced pain lasting for several months." What is the role of micro discectomy for the management of back pain?
- "My sacrum was out of place and was put back in by the physio." What role do manual therapies play to treat back pain?
- "I need to strengthen my core to get back to golf again." What is the role of core stability training?
- What should clinicians do? The paradigm shift required for managing a complex multidimensional problem like back pain.

I really enjoyed this paragraph as it sums up what we should be doing.
"Effective management of persistent pain involves providing a clear understanding of the factors that drives pain, developing graduated strategies to normalise and optimise movement patterns while controlling pain, coupled with sports specific conditioning and a graduated return to sport. Addressing psychosocial stressors and unhealthy lifestyle factors (ie, poor sleep patterns) is part of this process, especially where 'central' pain features are dominant. Magic bullets do not exist, so do not promise them" O'Sullivan pg 907.
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Interested in contributing?

If you would like to make any contributions to the Manual Therapy Research Review please contact Dr Duncan Reid on duncan.reid@aut.ac.nz

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