

Manipulation/Manual Therapy in the Treatment of Osteoarthritis

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Manual manipulation has a long history in the treatment of musculoskeletal pain [1]. Manipulation for the treatment of spinal pain conditions has become widely accepted as a result of numerous clinical trials, systematic reviews and clinical guidelines [2-4]. Surveys of chiropractic practice confirm that the vast majority of patients treated with manipulation present with MSK pain, and the majority of these present with spinal pain (back pain, neck pain) [5]. Manipulation for non-spinal or peripheral joints appears to be provided to a smaller proportion of patients. Accordingly, there has been less research in this area than in the area of spinal pain complaints.

In recent years, growing attention has been paid to sports-related injuries of the peripheral joints, and manipulation appears to be one of the accepted treatments for these types of acute or repetitive strain soft tissue injuries in mostly younger patients [6,7]. A different area of practice does, however, exist with respect to osteoarthritis in non-spinal joints experienced by patients in the later decades of life.

What is the status of the research on manipulation/manual therapy for osteoarthritis in the peripheral joints? A properly conducted systematic review would be necessary to give a definitive answer to this question; however, in this editorial, I will present a brief descriptive analysis of this evidence and I will attempt to provide an explanation of theories justifying the use of manipulation in osteoarthritis.

Manual manipulation is one of the types of therapies in the broader category of Manual Therapies. In its "professional clinical" form, it is currently practiced by chiropractors, osteopaths, physiotherapists and medical doctors ("manual medicine"). Within the broad category of manual therapy, manipulation sits at one pole of a spectrum of these therapies characterized by the magnitude of applied manual forces to the body tissues. Manipulation is characterized by high velocity, low amplitude manual thrusting procedures which aim to introduce motion to the joints. Mobilizations are performed without a thrusting component. At the other end of the spectrum, one would find low amplitude rubbing of the skin or the superficial muscles. This is characteristic of effleurage massage whose aim is to merely lightly stimulate these tissues.

The effects of manipulation-induced joint mobility include reduction of pain, reduction of muscle hyperactivity, induction of reflexes in the autonomic system, improvement in joint proprioception and, overall, an increase in joint mobility [8-13].

These effects constitute the aims of manipulation/manual therapy to the peripheral joints in clinical circumstances of acute or chronic (i.e., repetitive) strain and sprain of these joints as well as of chronic arthritic degeneration. The evidence base supporting the use of manipulation/manual therapy for peripheral joint complaints is comprised of a small set of Randomized Clinical Trials (RCT's) as well as review papers and protocols for current or future studies, all of which can be identified by standard search methods in Pub Med and Google Scholar. A search current to December 2012 identified 20 trials [14-33], 15 for the knee [14-28], 3 for the hip [29-33], 1 for both hip and knee [34] and 1 for the hand [35] as well as four review papers [6,36-38] and 3 protocols for current or future studies [39-41].

Knee Studies

It should be stated at the outset that, when speaking of "manipulation" for knee OA, I am not referring to manipulation under anaesthesia in the context of surgical correction.

The vast majority of the knee studies are by Chinese authors. For five titles, it was not possible to obtain at least an abstract. Abstract or full papers were available for ten trials. Three of these trials used a manipulation-only group [15,22,25]. All three reported greater improvements in pain or stiffness or MRI-documented cartilage healing in the manipulation groups as compared to glucosamine sulphate [25], acupuncture [22] or control manual techniques [15].

In seven studies, manipulation was combined with acupuncture [14,19], herbal therapy [17], moxibustion [20] or exercise [24,26,27]. Six reported greater improvement in the index group as compared to moxibustion alone [14], NSAID's [19] or glucosamine sulphate [17,25], home exercise [26] and placebo ultrasound [27]. One study [24] reported equal and clinically important results between Tuina manipulation+exercise vs. Tuina manipulation alone. Deyle et al. [28] devised a clinical prediction rule for knee OA patients who were not likely to benefit from manual therapy+exercises: patella-femoral pain, anterior cruciate ligament laxity and height greater than 1.71 m. Patients with at least 2 positive signs were 88% likely not to benefit from this treatment.

In one study, both knee and hip OA patients were included [34]. This study investigated the use of osteopathic manipulative manual therapy (OMT) in patient's post-arthroplasty. None of the other studies included post-surgical cases. These authors found that OMT was no more effective than a sham therapy in these post-surgical cases.

Hip Studies

Three RCT's of manual therapy/manipulation were identified [29-31]. In two of these [30,31], manual therapy was compared to either a no-treatment control or to an exercise group. In the former case, chiropractic manipulation was superior to no treatment for pain relief over 3 weeks; in the latter case, manual therapy was superior to exercise therapy for pain and range of motion over 5 weeks of therapy including to a follow-up of 29 weeks. In the third trial [29], two modes of manual therapy (full kinetic chain vs. local hip) were compared along with exercises. This study found clinically important improvements in the WOMAC score for both groups, although neither group was superior to the other.

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Hand Study

The only RCT [35] for the hand compared mobilization of the thumb to sham mobilization in 28 OA patients over a 2-week, 4 session study. The manual therapy group showed greater reductions in local pressure tenderness, but not in motor functions.

The review articles cited above generally acknowledge the value of manipulation for knee and hip OA patients, especially in cases that are less severe and in need of surgical correction. One interesting study [41] reported on the use of complementary medicine, including manipulation and manual therapies in 2679 patients with knee OA. Almost half of the subjects had used some form of CAM therapy. These authors concluded that "CAM is commonly used to treat joint and arthritis pain among persons with knee OA. The extent to which these treatments are effective in managing symptoms and slowing disease progression, remains to be proven.

Lapane et al.'s conclusion is quite appropriate for this editorial as a whole [41]. The current evidence base is encouraging of the notion that manipulation/manual therapy is helpful in osteoarthritis patients. It is also encouraging to see new and more sophisticated studies being planned in the protocols cited above. Hopefully, this will lead to greater acceptance and utilization of this form of therapy in osteoarthritis patients.

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