Interferential therapy and strengthening exercises in management of knee osteoarthritis

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Abstract

To overview literature regarding the role of interferential therapy in osteoarthritis knee and synthesize the findings of literature retrieved from searches of computerized databases and authoritative texts. The purpose of the study was an effort to find out the efficacy of Pulsed electromagnetic Energy & Interferential Therapy to control the pain in osteoarthritis of knee. To design and carry out a randomized controlled trial of a complex, physical therapy based intervention for patello-femoral joint (PFJ) osteoarthritis (OA) of the knee, examining medium to long-term outcomes. METHODS: The subjects were drawn from a large population-based research and experienced knee discomfort and PFJ OA. The objective of physiotherapy is to provide pain free and functionally acceptable joint. To control pain suitable electrotherapeutic modalities are preferably used like TENS, IFT, US, LASER etc. Exercise programme includes ROM exercises, strengthening exercises, joint mobilization, stretches, functional training, aerobic exercises etc. All these exercises or techniques help the muscle and the joints function to their greatest capacity, helping to restore injury by hastening recovery and lowering pain and distress at knee joint. It is a common cause of disability worldwide. Aim of the study is to compare the effect of weight bearing exercises on wobble board and stable platform in improving balance and functional outcome by the pre and post analysis.

INTRODUCTION

Osteoarthritis (OA) is a prolonged, deteriorating the most prevalent illness of the musculoskeletal system, it primarily affects weight-bearing joints (Naredo et al, 2005). It is predicted to have a significant impact. According to Felson (1982), up to 10% of adults over the age of 65 in the United States suffer from the condition, resulting in a $86 billion economic burden (Abell 2005). Therefore the best ways to manage the condition are important to keep the physical functioning of the individual sufferer high and the cost to the economy low. Osteoarthritis (OA) is the single most common form of joint disease and remains a leading cause of pain, physical impairment and decline in health-related quality of life in adults around the world. The physiotherapy modalities commonly used include interferential current (IFC), transcutaneous electrical nerve stimulation (TENS), exercise, cold therapy, acupuncture, low-energy laser, vibration, topical gel and orthotic devices. Treatment for knee OA begins with conservative methods and progress to surgical treatment when conservative treatment fails. Conventional treatment includes patient education, lifestyle modification, weight reduction, knee bracing and medication. Treatment for knee OA begins with conservative methods and progress to surgical treatment when conservative treatment fails. Conservative treatment includes patient education, lifestyle modification, weight reduction, knee bracing and medical manifestations include pain and inflammation of joint capsule, impaired muscle stabilization, reduced range of motion and functional incapacity.

REVIEW:

In this randomized clinical trial, 70 patients over 50 years old with minor and adequate knee OA based on American College of Rheumatology criteria visiting physical medicine and rehabilitation clinics of Shohada Hospital, Tabriz University of Medical Sciences, Tabriz, Iran were randomly assigned to be treated with IFT. People with acute knee OA, some common chronic diseases, lower extremity fractures with lower limb engagement, past of knee surgery, lower limb thrombosis,
interpersonal and inter corticosteroid injection in the previous 6 months, balance control deficit, neuropathy or sensory deficit, and skin damage in the knee region, as well as epilepsy, cancers, heart conduction block disease, and having electrical implants such as a pacemaker, were exempted. The protocol was approved by the local ethics committee of our institution, and informed consent was obtained from all study participants.(6-15)

A survey was performed among Belgian physiotherapists. Guideline Obedience was assessed using a set of nine quality indicators designed for the Belgian primary healthcare system, which were adapted for use by physiotherapists and derived on evidence-based principles. Treatment modalities that do not contribute to high quality care were also examined.(16-25)

Physiotherapy Techniques

Techniques in physiotherapy are useful therapeutic enhancers++ in the treatment of osteoarthritis (OA) complaints. These drugs can help with particular joint issues, but they're not good for treating OA in general. Analgesia and muscle relaxation methods may also be used to prepare future rehabilitation and increase muscle enactment.(26-30)

Muscle Relaxing Action

Muscle spasms can cause discomfort and restrict joint mobility. Furthermore, muscular tension increases intra-articular stress and strain on the cartilage. Muscle spasm also lowers muscular blood flow, resulting in local ischaemia. Tendons can also induce inflammation as a result of tensile tension generated by muscular spasm. Pain is caused by increased intra-articular pressure and tendon inflammation, which results in induced or intensified muscular spasm. Inhibition of muscle spasms is a significant therapeutic goal in the treatment of OA.(31-36)

Interferential Current (IFC)

In comparison to the control group, IFC is the only treatment that is substantially effective in terms of pain intensity and pain score at the last follow-up period (blank or sham). In the meantime, IFC is likely to be the best treatment option among the six methods of treatment for pain relief.(10)

METHODS OF APPLICATION OF IFT:

1) 2 POLE – FOR SMALL AREA
2) 4 POLE – FOR LARGE AREA (LOCALISED PAIN)
3) 4 POLE VECTOR – CENTRALISED PAIN

In comparison to TENS, IFT is thought to have physiological effects on deeper layers. When two medium frequency currents of significantly different frequencies are arranged in such a way that their amplitudes cross, a low frequency is created that is believed to equal the differences between these two medium frequencies. Beat frequency is the term for the resulting low frequency[20]. This beat frequency can be compared to a bundle of sine waves that is meant to be one. Rather than calling a box containing a hundred sweets "a hundred sweets," treat it one box. As a result, short - wavelength stimulation dominates in basic words and in effects. (1)

EXERCISES OF KNEE OA:

health. People exercise for many reasons; they may exercise to lose weight, to strengthen muscles or to relieve Exercise can be any activity that increases or maintains muscle strength, physical fitness and overall the symptoms of OA.(11)

Conclusion

In individuals with knee OA, short-term IFT therapy might considerably decrease discomfort and enhance physical performance. These findings suggest that physical approaches can be utilised as an alternative to medications or as a supplement
to drugs in the treatment of knee OA pain. It should be noted that this study is the first to compare IFT in treatment of knee OA, so further studies are needed to confirm these findings.(6)

Long term treatment with strengthening exercises could significantly relief pain and improves physical strength and range of motion of knee joint.

REFERENCES

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