

A Literature Review on Effects of Adjunct Techniques on Plantar Fasciitis

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Abstract

The literature review on adjunct techniques in plantar fasciitis was aimed to provide an evidence-informed overview to highlight the role of adjunct treatment techniques in plantar fasciitis. Research articles were explored from PubMed and PEDro for dry needling and kinesio taping in plantar fasciitis. This will help in the treatment of plantar fasciitis and to improve the foot function in an effective way in short duration. More high quality research articles are needed to prove the efficacy of adjunct techniques in plantar fasciitis.

Keywords: Intra Muscular Manual Therapy; Rehabilitative Taping; Plantar Heel Pain; Podiatric Rehabilitation; Soft Tissue Injuries.

Introduction

Plantar Fasciitis (PF) is the most common and disabling musculoskeletal pathology of foot. Plantar fasciitis is an overuse condition that results from repeated micro trauma to the Plantar Fascia at its attachment to the calcaneus, and it is due to collagen disarray in the absence of inflammation. Thus, the pathology resembles that of tendinosis [1]. It is estimated that 10 in 100 people are affected by PF at some point during their life span. Middle aged and older adults are predominantly affected and it is more common in women [2]. PF accounts for about 8-15% of the total foot complains in non-athletic and athletic populations [3].

Although PF is known to be idiopathic there are certain risk factors such as obesity, sedentary life style, occupations which require prolong standing, long distance running and limited dorsiflexion at ankle joint due to calf muscle tightness [2]. The existing literature attributes plantar fasciitis to the

involvement of myofascial meridians [4, 5]. As the fascial connective tissue is a continuous system; the tightness or myofascial dysfunction of the posterior muscles of leg alters the stress on plantar fascia [6].

Conservative management addressing myofascial dysfunction in plantar fasciitis includes Medical management which consists of Relative rest, NSAIDs and Corticosteroids [7]. Physiotherapy is a preferred treatment which aims at alleviating pain and restoring mechanical function [8]. Existing Physiotherapy management includes icing, stretching of gastrocnemius muscle and plantar fascia, strengthening of intrinsic foot muscles, taping, myofascial release (MFR), shoe inserts, manual mobilization to ankle joint complex, night splints, iontophoresis, therapeutic ultrasound [7, 9].

Adjunct techniques of dry needling and Kinesio taping are increasingly used for the treatment of myofascial dysfunctions by physical therapists. In this study we explored the research articles from PubMed and PEDro for dry needling and kinesio taping in plantar fasciitis.

Adjunct techniques and plantar fasciitis

Cotchett et al [10] conducted a parallel-group, participant-blinded, randomized controlled trial to evaluate the effectiveness of dry needling for plantar heel pain. 84 patients with heel pain of at least 1 month's duration were randomly assigned to receive real or sham trigger point dry needling; with one

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treatment per week for 6 weeks and were followed for 12 weeks. They concluded that dry needling provided statistically significant reductions in plantar heel pain, but the magnitude of this effect should be considered against the frequency of minor transitory adverse events.

Akhbari et al [4] conducted a case report to describe the use of dry needling based on myofascial meridians for management of plantar fasciitis. A 53 year old man with bilateral chronic plantar fasciitis of more than 2 years; initial examination revealed that multiple trigger points were found along the insertion of Achilles tendon, medial gastrocnemius, biceps femoris, semimembranosus and ischial tuberosity and dry needling of trigger points was applied; after 4 treatments over 2 weeks the patient felt a 60% to 70% reduction in pain and his pressure pain threshold was increased. Thus, they concluded that dry needling to additional locations along superficial back line suggests that a more global view on management of plantar fasciitis was beneficial for that patient.

Tsai et al [11] conducted a randomized controlled trial to investigate the therapeutic effects of kinesio taping on plantar fasciitis. 52 patients with PF were randomly allocated to two groups; control group received only a traditional physical therapy program daily, including ultrasound thermotherapy and low-frequency electrotherapy; experimental group received kinesio taping of gastrocnemius and plantar fascia in addition to the same physical therapy program as the control group continuously for one week and they noted the reduced pain scores and the reduced thickness of plantar fascia at the insertion site after treatment were significantly more in the experimental group than in the control group. Thus, they concluded that the additional treatment with continuous kinesio taping for one week might alleviate the pain of plantar fasciitis better than a traditional physical therapy.

Discussion

The available physiotherapy treatment for plantar fasciitis takes long duration to alleviate symptoms. For greater improvement in shorter duration, the addition of dry needling and kinesio taping to existing physiotherapy treatment can be effective in reduction of symptoms in patients with plantar fasciitis. Limitation of this review is lack of systematic review and lack of clinical trials.

Conclusion

During this literature review we found that how adjunct techniques are effective in the treatment of plantar fasciitis; but there are only two PubMed and one PEDro indexed researches are published till date. The intention of this review is focused to emphasize the researches for treatment of plantar fasciitis with adjunct techniques in future; so that plantar fasciitis can be treated in a effective way in short duration.

Conflict of interest

None identified and/or declared

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