

EVALUATING THE EFFECTS OF PHONOPHORESIS WITH DEXAMETHASONE VS. LIDOCAINE HYDROCHLORIDE IN THE MANAGEMENT OF PLANTAR FASCIITIS

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ABSTRACT :

Objective: plantar fasciitis is a progressive chronic disease with increased prevalence estimate. In managing plantar fasciitis, inadequate pain relief often occurs, particularly with a single non-steroidal anti-inflammatory drugs therapy.

Methods: A total of 6 participants were randomly allocated into two groups, received phonophoresis

Results: On comparing, the baseline phonophoresis group with dexamethasone showed significantly more pain reduction than the lidocaine therapy. Enrolled patients in two groups have completed the study without any drawbacks.

Conclusion: This study showed that phonophoresis with dexamethasone was superior in reducing pain in patients with symptomatic plantar fasciitis.

Keywords: dexamethasone, lidocaine hydrochloride, Ultrasound therapy, Phonophoresis, plantar fasciitis

I.INTRODUCTION

Overall unadjusted incidence rate of plantar fasciitis was 10.5 per 1000 person-years. Compared with men, women had a significantly increased adjusted incidence rate ratio for plantar fasciitis of 1.96 (95% confidence interval, 1.94 to 1.99). The adjusted incidence rate ratio for the age group of forty years old or more compared with the twenty to twenty-four year-old group was 3.42 (95% confidence interval, 3.34 to 3.52). It is an inflammation of plantar fascia caused by the repetitive strain and it is characterized by heel pain that is worse in the morning with the first few steps. Obesity, standing on hard surface for long periods of time, Excess running or physical activity, High arches of the feet, Tight calf muscles that restrict movement of the foot, Inappropriate foot wear, Hereditary factors.

Barett SJ and O'Malley concluded that Plantar fasciitis is most common cause for heel pain and it is usually caused by biomedical imbalance resulting in tension along the Plantar fascia and other causes for heel pain may have a neurologic, traumatic or systemic origin. [Am Fam Physician 15;59(8):2200-6-10-1999 Apr.] Sadat-Ali M, Concluded that obesity is a cause and initiator of heel pain and Plantar fasciitis/ Calcaneal spur and that also stated improper foot wear aggravates the condition. (Mil Med 163 (1) 56-760 1998 Jan). Hill JJr & Cutting PJ found the study statistically significant correlation between heel pain and increased body weight is documented in a series of consecutive plantar heel pain patients (foot ankle 9(5):254-244 1999 Apr). Ryan, J., Suggested that night splints can obviate the need for invasive therapies such as corticosteroid injection and surgery. Barry L.D., Barry AN, in their study concluded that early treatment in the standardized four-tiered treatment approach, including the night splint without standing stretching of the gastrocnemius-soleus complex speeds time to recovery.

Powell M, Post WR, Keener J, in their study they found that the dorsiflexion splints provide relief from the symptoms of recalcitrant plantar fasciitis in the majority of patients. Digiovanni BF, Nawoczenski DA, Lintac. Me et al., found that programme of non-weight bearing stretching exercises specific to the plantar fascia is superior to the standard programme of weight bearing Achilles tendon stretching exercises for the treatment of symptoms of proximal plantar fasciitis. This findings provide an alternative option to the present standard of care in the non-operative treatment of patients with chronic, disabling plantar heel pain. Batt ME, Tanji, JI., suggested that the tension night splints when used in combination with visco-elastic heel pad, stretching program and non-steroidal anti-inflammatory drugs is an effective treatment of plantar fasciitis. Chigwanda PC, in his study said that majority of patients diagnosed with plantar fasciitis were female 90% at the mean age of 48.5 years with most of

the patients having no calcaneal spur, 60% and 64% having unilateral disease and this was predominantly left side, 94% ha relief of their symptoms following a single injections.(Cent Afr J Med 43 (1) : 23-25 90 1997 Jan). Young.CC& Rutherford DS, started that many treatments options exist, (rest stretching, strengthening, change of shoes, arch supports orthotics, night splints, anti-inflammatory agents and surgery). Usually plantar fasciitis can be treated successfully by tailoring treatment to an individuals risk factors and preferences.

II. METHODOLOGY

Study design

The study design was a pre —test and post-test Experimental study.

Sampling

Based on the following criteria 6 patients who had chronic plantar fasciitis for a duration of atleast 6 months were selected for the study and they were randomized into one of two treatment groups.

Criteria for sample section

i.Inclusion criteria:

Age between 25 and 45 years

Both male and females

ii.Exclusion criteria:

Subjective with any of the following condition were excluded from study

Calcenealapophysitis

Retro calceneal bursitis

Subtalar joint ligament sprain

Tenosynovitis Arthritis

Compression of nerve to abductor digit minimi

Calcenealperiostitis

Congenital deformity

Ankle fracture

Procedure

Group A:

Received the Phonophoresis with dexamethasone

Group B:

Received the Phonophoresis with lidocaine hydrochloride

Study duration : 1 months

Treatment duration : 4 week

Patients were assessed before and after 4 week of treatment.

Group A : Treatment was given for 2 weeks as 6 session

Group B : Treatment was given for 2 weeks as 6session.

TABLE 1: COMPARISON OF SCORES (UNPAIRED T-TEST) OF VAS AND FFI BETWEEN TWO GROUPS

Outcome measures	TESTING METHOD	GROUP A	GROUP B	T VALUE
VAS	PRE-TEST	7	5	4.534
	POST-TEST	3	4	2.2745
FFI	PRE-TEST	44	40	3.345
	POST-TEST	30	37	2.234

III. DISCUSSION

Six patients who had chronic plantar fasciitis participated in this study.They were divided into two groups, Group A and Group B each group consist of 3 patients. They were evaluated before and after treatment. An patients completed the study with the duration of 1 months. The 3 patients in the Group A showed maximal pain reduction. the remaining 3 patients in the Group B complaint about minimal pain. Group A showed significant reduction of pain out of which 1 patients complained about very minimal pain (VAS score of 1). Based on the statistical analysis, VAS score showed mean improvement of 7.5 and 3.2 for experimental and control group respectively. Both groups have symptomatic recovery but the phonophoresis with dexamethasone group showed greater symptomatic recovery than the control group. The independent‘t’ test was performed to analyse the results. The calculated ‘t’ value is 4.070 which is greater than the table value of 2.262 in accordance to be significant favouring the rejection of null hypothesis. SO,“ There is a significant

difference in the symptomatic recovery on using phonophoresis with dexamethasone in patients with chronic plantar fasciitis

IV. CONCLUSION

The study was done to find out optimal treatment strategy for chronic plantar fasciitis. Based on the statistical analysis It is clear that treatment protocol using dexamethasone is significantly more effective. Hence, we conclude that phonophoresis with dexamethasone provide better pain relief in chronic plantar fasciitis.

LIMITATIONS OF THE STUDY

The study was conducted with a small number of sample.

The study was of short duration.

Gender differences not made.

Age restricted to 25 - 45 years.

RECOMMENDATIONS FOR THE FURTHER STUDY

This study can be done with larger sample size.

This study can be done in long term duration.

This study can be done comparing the effectiveness of ultrasound in the management of plantar fasciitis.

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