



"A STUDY TO FIND THE EFFECTIVENESS OF MYOFASCIAL TRIGGER POINT FOR ACHILLES TENDON INJURY"

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Introduction:

Achilles tendon injury is one of the common problems in the soccer players, as they are required to use fine techniques of the game with their feet. Achilles tendon plays major role in outdoor sports activities because of its dual association with the two prime Plantar flexors, Gastrocnemius and the Soleus muscles. Achilles tendon injury is a common condition that causes pain along the back of the leg near the heel. It is an overuse injury of the Achilles tendon, the band of tissue that connects calf muscles at the back of the lower leg to the heel bone. The aim of study is comparing the effect of Myofascial Trigger Point with Tendo-Achilles Stretching in the management of pain in Achilles tendon injury.

Methodology:

This Study was Comparative Study Design. The sampling method is Purposive random sampling and sample size is 20. The duration of study is 2 weeks. Soccer players with Acute Achilles tendon injury of age group 18 to 23 years were taken as subjects for study. The samples were equally divided into two groups (each 10) as Group A treated with stretching and Group B include Myofascial Trigger Point. The inclusion criteria and exclusion criteria are considered in this study. Subjects referred by an orthopedic department were assessed according to the selection criteria. Then the consent form was obtained by subjects. Outcome measure was VAS for pain and FFI for foot function

Results:

20 subjects with Achilles tendon injury were included in this study and randomly divided into two groups A and B each group consist of 10 subjects. Group A was treated with stretching. Group B was treated with myofascial trigger point manual pressure release therapy. Pain and foot function were assessed before and after intervention by VAS and FFI. The statistical result shows that there is improvement in both the groups.

Conclusion:

When comparing both groups A and B each group, it found that myofascial trigger point manual pressure release technique is more effective than stretching in reducing pain and improving foot function among Achilles tendon injury.

Key words: Achilles tendon injury, soccer players, stretching and Myofascial Trigger Point.

INTRODUCTION

Achilles tendon injury is one of the common problems in the soccer players, as they are required to use fine techniques of the game with their feet. Achilles tendon plays major role in outdoor sports activities because of its dual association with the two prime Plantar flexors, Gastrocnemius and the Soleus muscles.

Any injury of the Achilles tendon would probably result in decreased strength of plantar flexors. This affects the plantar flexion of sports person's gait parameters and at large, activities like walking, running and jumping. The factors, which may result in the inflammation of the Achilles tendon, include the mechanics of running, gait, jumping activities in the field. Furthermore, the type of boot, the playing surface and the biomechanics of foot and ankle of the soccer player also contribute towards the inflammation of the Achilles tendon. Achilles tendon injury is liable to occur most commonly in rookie soccer players. Soccer players with right foot or generally predisposed to this condition, because the player has to modify the gait pattern in order to compensate a varus or valgus stress of the hind foot. Injuries in soccer players occur due to improper warm up of tissues and also due to improper mechanics of playing skills. The factors cause repeated stress over the tendon and pave way for an acute inflammation to set up there by rendering the player inactive. Soccer boots that fit poorly would cause friction on both the heel contour and the tendon. Boots with the right heel may not permit adequate range of motion in the mid-foot and the forefoot thus contributing to alternation in foot biomechanics.

Soccer player suffering from Achilles tendon injury typically describes pain as felt along the length of the tendon. This area is tender, particularly while performing active plantar flexion. This condition may result in tightness of Plantaris, Gastrocnemius and Soleus muscle.

NEED OF THE STUDY

Achilles tendon injury is a common condition that causes pain along the back of the leg near the heel. It is an overuse injury of the Achilles tendon, the band of tissue that connects calf muscles at the back of the lower leg to the heel bone. It most commonly occurs in runners who have suddenly increased the intensity or duration of their runs and who play sports, such as tennis, soccer, basketball etc., and this condition also causes lots of physical and psychosomatic stresses.

The aim of study is comparing the effect of Myofascial Trigger Point with Tendo-Achilles Stretching in the management of pain in Achilles tendon injury.

METHODOLOGY

This Study was Comparative Study Design. The sampling method is Purposive random sampling and sample size is 20. The duration of study is 2 weeks. Soccer players with Acute Achilles tendon injury of age group 18 to 23 years were taken as subjects for study. The samples were equally divided into two groups (each 10) as Group A stretching and Group B include Myofascial Trigger Point. The inclusion criteria of study are Soccer player with Acute Achilles tendon injury, Subjects should be actively participating in the study, Age ranging from 18-23 years, and Male. The exclusion criteria are ☐ Subjects with

condition other than Acute Achilles tendon injury, Age below and above 18 - 23 years, subjects other than soccer players, and subjects not willing to participate in study. Subjects referred by an orthopedic department were assessed according to the selection criteria. Then the consent form was obtained by subjects. Outcome measure was VAS for pain and FFI for foot function. Before collection of data, all the subjects were explained about the purpose of the study.

Results

The collected data were analyzed by paired 't' test to find out significance difference between pre and post - test values of experimental groups and further unpaired 't' test was applied to find out the differences between groups.

TABLE-1: THE MEAN VALUE, MEAN DIFFERENCE, STANDARD DEVIATION AND PAIRED 'T' VALUE BETWEEN PRE AND POST TEST SCORES OF PAIN AMONG GROUP A

Measurement	Mean	Mean difference	Standard deviation	Paired 't' value
Pre- test	7.4	3.4	1.1832	8.8*
Post- test	4			

*0.005 level of significance

In Group A calculated paired 't' value for pain is 8.8 and the 't' table value is 3.250 at 0.005 level of significance since the calculated 't' value is more than the 't' table value above value shows that there is significant difference in pain following ultrasound therapy in Achilles tendon injury subjects.

TABLE-2:

THE MEAN VALUE, MEAN DIFFERENCE, STANDARD DEVIATION AND PAIRED 'T' VALUE BETWEEN PRE AND POST TEST SCORES OF PAIN AMONG GROUP B

Measurement	Mean	Mean difference	Standard deviation	Paired 't' value
Pre- test	8	6	3.898	4.86*
Post- test	2			

*0.005 level of significance

In Group B calculated paired 't' value for pain is 4.86 and the 't' table value is 3.250 at 0.005 level since the calculated 't' value is more than the 't' table value, the above value shows that there is significant difference in pain following myofascial trigger point manual pressure release in Achilles tendon injury subjects.

TABLE-3: THE MEAN VALUE, MEAN DIFFERENCE, STANDARD DEVIATION, AND UNPAIRED ‘T’ VALUE OF PAIN BETWEEN GROUP A AND GROUP B

Sl. no	Groups	Improvement		Standard deviation	Un paired ‘t’ Test
		Mean	Mean Difference		
1	GROUP-A	3.4	2.6	7	5.4*
2	GROUP-B	6			

*0.005 level of significance

In Group A and B (for pain) calculated un paired ‘t’ value is 5.4 and the ‘t’ table value is 2.87 at 0.005 level since the calculated ‘t’ value is more than the ‘t’ table value above value shows that there is significant difference between ultrasound and myofascial trigger point manual pressure release in pain among Achilles tendon injury subjects.

TABLE- 4: THE MEAN VALUE, MEAN DIFFERENCE, STANDARD DEVIATION, AND PAIRED ‘T’ VALUE BETWEEN PRE- TEST AND POST-TEST SCORES OF FOOT FUNCTION ABILITY AMONG GROUP A

Measurement	Mean	Mean difference	Standard deviation	Paired ‘t’ value
Pre- test	68.24	33.16	33.11	3.164*
Post- test	35.08			

*0.005 level of significance

In Group A for FFI calculated un paired ‘t’ value is 3.164 and ‘t’ table value is 2.87 at 0.005 level. Since the calculated ‘t’ value is more than ‘t’ table value above value shows that there is significant difference in foot function following ultrasound therapy in Achilles tendon injury subjects.

TABLE- 5: THE MEAN VALUE, MEAN DIFFERENCE, STANDARD DEVIATION, AND PAIRED ‘T’ VALUE BETWEEN PRE- TEST AND POST-TEST SCORES OF FOOT FUNCTIONAL ABILITY AMONG GROUP B

Measurement	Mean	Mean difference	Standard deviation	Paired ‘t’ value
Pre- test	71.07	53.35	53.64	3.13
Post- test	17.71			

*0.005 level of significance

In Group B for FFI calculated paired ‘t’ table value is 3.13 and ‘t’ table value is 2.87 at 0.005 level. Since the calculated ‘t’ value is more than the ‘t’ table value above value shows that there is significant difference in foot function following myofascial trigger point manual pressure release in Achilles tendon injury subjects.

TABLE-6: THE MEAN VALUE, MEAN DIFFERENCE, STANDARD DEVIATION AND UNPAIRED ‘T’ VALUE OF FOOT FUNCTIONAL ABILITY BETWEEN GROUP A AND GROUP B

Sl. no	Groups	Improvement		Standard deviation	Un paired ‘t’ Test
		Mean	Mean Difference		
1	GROUP-A	33.16	20.2	1.24	35.30*
2	GROUP-B	53.35			

*0.005 level of significance

In Group A and B for FFI calculated un paired ‘t’ value is 35.30 and the ‘t’ table value is 2.87 at 0.005 level. Since the calculated ‘t’ value is more than the ‘t’ table value above value shows that there is significant difference between ultrasound therapy and myofascial trigger point manual pressure release in the management of foot function among Achilles tendon injury subjects.

RESULT

The calculated Paired ‘t’ value is 8.8 and the table ‘t’ value is 3.25 at 0.005 level of significance. Hence, the calculated ‘t’ value is greater than the Table ‘t’ value. There is significant difference in pain following ultrasound therapy with stretching among Achilles tendon injury subjects.

ANALYSIS OF DEPENDENT VARIABLE PAIN IN GROUP B:

The calculated paired 't' value is 4.86 and the table 't' value is 3.25 at 0.005 level of significance. Hence, the calculated 't' value is greater than the table 't' value there is significant difference in pain following myofascial trigger point manual pressure release technique.

DEPENDENT VARIABLE PAIN BETWEEN GROUP A AND GROUP B:

The calculated unpaired 't' value is 5.44 and the table 't' value is 3.250 at 0.005 level of significance. Hence, the calculated 't' value is greater than table 't' value there is significant difference between conventional therapy and myofascial trigger point manual pressure release techniques in reducing Achilles tendon injury .

When comparing the mean values of Group A and Group B, Group B subjects treated with Myofascial Trigger Point showed more difference than Group A. Hence it is concluded that myofascial release therapy is more effective than ultrasound therapy with stretching in reducing pain among Achilles tendon injury.

The calculated paired 't' value is 3.164 and the table 't' value is 3.250 at 0.005 level of significance. Hence, the calculated 't' value is greater than the table 't' value there is significant difference in foot function following conventional therapy among Achilles tendon injury..

The calculated paired 't' value is 3.132 and the table 't' value is 3.250 at 0.005 level of significance. Hence, the calculated 't' value is greater than the table 't' value there is significant difference in foot function following Myofascial Trigger Point among Achilles tendon injury.

DEPENDENT VARIABLE FOOT FUNCTION BETWEEN GROUP A AND GROUP B:

The calculated unpaired 't' value is 35.3 and the table 't' value is 3.25 at 0.005 level of significance. Hence, the calculated 't' value is greater than table 't' value, there is significant difference between conventional therapy and myofascial trigger point manual pressure release technique in improving foot function among Achilles tendon injury.

When comparing the mean values of Group A and Group B, Group B subjects treated with Myofascial Trigger Point showed more difference than Group A. Hence it is concluded that Myofascial Trigger Point is more effective than ultrasound therapy with stretching in improving foot function among Achilles tendon injury.

DISCUSSION

Achilles tendon injury is one of the conditions, which can be treated by a wide variety of physiotherapy methods. It is still difficult to formulate all proof guidelines for the management of Achilles tendon injury. Various methods of treatment exist with own claims of success without any attempts of comparing the maximal methods. The objective of this study was to find out the effectiveness of Myofascial Trigger Point in treatment of Achilles tendon injury. The aim of the study was to find out effect and compare the effectiveness of ultrasound therapy with stretching and Myofascial Trigger Point on reduction of pain and improving the foot function among Achilles tendon injury subjects.

Results of the present study shows that there is significant difference in pain and foot function following Myofascial Trigger Point among Achilles tendon injury subjects.

This result was supported Chung et al., (2007) they concluded in their study that treatment of Achilles tendon injury with ultrasound - guided steroid injection. Proximal plantar fascia and heel pad were assessed with a 10 –MHz liner array ultrasound transducer. Pain intensity was quantified with a tenderness threshold (TT) and visual analog scale (VAS) and was concluded that ultrasound offered an objective measurement of therapeutic effect on it.

CONCLUSION

An experimental study was conducted to investigate the effectiveness of ultrasound therapy with stretching and Myofascial Trigger Point in the management of Achilles tendon injury. 20 subjects with Achilles tendon injury were included in this study and randomly divided into two groups A and B each group consist of 10 subjects. Group A was treated with stretching. Group B was treated with myofascial trigger point manual pressure release therapy. Pain and foot function were assessed before and after intervention by VAS and FFI. The statistical result shows that there is improvement in both the groups. But when comparing both group, it found that myofascial trigger point manual pressure release technique is more effective than stretching in reducing pain and improving foot function among Achilles tendon injury.

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