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Effect of Kiastm on the Thoracolumbar Fascia for Acute Low Back Pain.

Dr. Birupakshya Mahakul (PT), Dr. Kanu Kaushik (PT), Dr. Aakansha (PT) , Dr. Nandini Patel (PT)

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ABSTRACT

Background: This study was aimed to test the efficacy between KIASTM on thoracolumbar fascia (TLF) with Mckenzie extension exercise V/S Mckenzie extension exercises alone on subjects with acute low back pain to improve pain and quality of life.

Methodology: Participants fulfilling the inclusion criteria were randomly assigned to group A and group B, where group A was treated with KIASTM on TLF and Mckenzie extension exercises whereas group B was treated with Mckenzie extension exercises only . Group A and Group B received treatment for 5 days in a week for 10 treatment sessions. The outcome measures were pain intensity (VAS) and quality of life (ODI) statistics and safety on Day 1 and Day 10 were compared.

Result: 30 patients were included in the study with 15 subjects in each group. After 10 treatment sessions, subjects reported significant less pain in group A who were treated with KIASTM for TLF with Mckenzie extension exercises on pain and quality of life.

Pain was measured by Visual analogue scale (VAS). Percentage change in VAS score for pain post intervention in group A and group B was found to be significant (42.2% 19.1% respectively P value 0.001)

The quality of life was measured by Oswestry disable index score ODI).

Percentage change in ODI score for quality of life post intervention in group A and group B was found to be significant (31.3% 16.4% respectively P value 0.001).

Conclusion: Effect of KIASTM on TlF with Mckenzie extension exercise was more effective as compared to those who were treated only with Mckenzie extension exercises. Therefore, KIASTM is a effective tool along with Mckenzie extension exercises for reduction of pain and improvement of quality of life in acute low back pain.

Keywords: KIASTM, TLF, VAS, ODI, Mckenzie extension exercises, acute low back pain

I. INTRODUCTION

Fascia is a possible cause of low back pain (LBP) which is likely to trigger by nociceptors in the thoracolumbar fascia (TLF). The thoracolumbar fascia covers the deep muscle in the back of the spine and abdominal muscle. It's act as a force transmitting structure along with gluteus maximus, latissimus dorsi and other muscle which are connect with no. of other muscle, which helps in movement of the proximal limb.

Lower back pain is on of the most common problem for visiting physiotherapist, orthopaedic, and manual therapist. Low back pain is considered to be cured more early within 6 weeks of onset and 2.7% become chronic.

About 65% of the population suffer from LBP due to delayed treatment after 1 year of onset of pain. The complication of function leg length discrepancy are one of the cause for the development of LBP. Which might be the result due to the tightness of TFL, which act as central biomechanical part of the pelvic structure which give symmetry to the pelvic structure. The tightness of TFL influence the myofascial chain which after the connection between skin , muscle and bone in the kind of biomechanical function. The new treatment approach like KIASTM which is a easy and effective way of myofascial release, which improve pain and disability in such condition

KIASTM which is a simple non-invasive form of manual technique to mobilize the soft tissue like fascia, muscle and other soft structure of human body, which can be applied alone or with adjacent to exercise, mobility, other, manual technique. It is based on DTFM invented by Cyriax 1980, as result shows the case or the result of LBP may be after by improving the quality of thoracolumbar fascia as in case of KIASTM.

The aim of the study was to investigate the immediate effect of KIASTM by using accel tool on TLF with McKenzie spinal extension exercise as compared to only spinal extension exercise on subject with acute LBP in improving pain and quality of life.

II. METHODOLOGY

- Source Of Data: - Patients with acute LBP fulling inclusion criteria where taken for the study.
- Study Duration: - 10 treatment sessions (5 days in a week for 2 weeks).
- Sampling Technique: - Allotment of the individual study group was done randomly.
- Inclusion Criteria: - Acute LBP as for Europe guideline for its management a minimum score of 10 on Oswestry disability index. And a minimum score of 9 of VAS. Pain less than 6 weeks of duration. Both male and female subject aged 18-60yrs. Pain free prone line for 15 min.
- Exclusion Criteria: - Previous history of severe back or lower extremity injury or surgery. Spinal deformity like scoliosis, kyphosis, stenosis. Spinal Surgery. Ankylosing Spondylosis.Rheumatoid Arthritis. Spinal Fracture , tumour , infection. Psychiatry and bleeding disorder. Pregnancy. Corticosteroid medication and injection.

Acute systemic infection.

Procedure:

The subject which screen for eligibility of inclusion and exclusion criteria and then they where divides in to two group using block randomisation. A inform written written consent was taken. Group “A” received KIASTM and McKenzie extension exercise and group “B” received McKenzie exercise. Firstly participation data will be collected with include details of demographic data i.e. name, age, sex, occupation.After exercise intervention value of parameter i.e. : VAS for pain and ODI was noted on day 1 of the study and on day 10 of the study.

In group A (15 Subject) the patient position was iin prone lying with are at side of body and leg parallel to each other with head in neutral the part to be treated was exposed from D12- S2 . The physiotherapist standing on side to be treated IASTM was done using standard protocol using accel tool, which are scanning technique to see the restriction over the affected area followed by combining technique with deep stroke and finally cool down phase. The duration of the technique was around 60-90 sec gives daily for 10 days following KIASTM patient was given McKenzie extension exercise which are prone position lying flat, prone position on elbow with spine in extension, prone position on hands spine in full extension with elbow extension and standing lumbar extension with hand on back and extending the spine. All exercise were done for 10 times each with hold of 5 counts.

In group B (15 subjects) the patients were given McKenzie extension exercise that is (All exercise were done for 10 times each with hold of 5 counts.)

III. STATISTICAL ANALYSIS:

Statistical analysis was carried out for sex ratio of two groups by “Y” ates correction and unpaired ‘t’ test. Mann Whitney “U” was used for subjective analysis for VAS score and ODI. Statistical analysis was considered significant if the “P” value less then 0.05

IV. RESULTS:

Table 1: Patient details

Sl. No		Group A	Group B
1	Age (years)	28.27±4.67	29.13±3.66
2	Sex	12m/3f	13m/2f

Table 2: Change in Pain (VAS)

Group A		Group B	
Pre	Post	Pre	Post
6.00±0.76	3.47±0.99	6.27±1.03	5.07±0.59

Note: The t value for group A was 3.50 and p value was <0.001.The t value for group B was 2.99 and p value was 0.003.

Table 3: Change in quality of life using ODI

Group A		Group B	
Pre	Post	Pre	Post
32.00±4.34	22.00±4.07	38.27±4.52	32.00±2.50

Note: The t value for group A was 3.45 and p value was <0.001.The t value for group B was 3.44 and p value was <0.001.

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On 10th day mean VAS score of group A and B was found to be significant i.e 42.2% for group A and 19.1% for group B (P = 0.001). It was observed there is decrease in pain in group A as compared to group B after 10 days of treatment. The Quality of life measure by ODI score which was 31.3% for group A and 16.4% for group B (P = 0.001). It was observed that percentage change in ODI score for quality of life is significantly good in group "A" who where treated with KIASTM and McKenzie exercise.

V. DISCUSSION:

This study examine the effect of KIASTM with McKenzie extension exercise to reduce LBP. The main result shows a clear difference between the level of pain reduction by VAS and improvement in quality of life using ODI. The main ODI score for both group is significantly equivalent (P = 0.001). it has been seen the reduction in Oswestry of 6 point or greater are considered clinically meaningful (Fritz and Irrgng , 2001). The change in score for both group in study show clinically significant level (6.27, 16.4% in group B and 10, 31.3 % in group A). KIASTM is one of the unique technique to improve range of motion and functional task completion. It has been reported through control clinical trial to evoke acute change in musculoskeletal physiology through variety of proposed theory. Lee et al (2016) stated that there was significant reduction in pain using KIASTM for 4 weeks in 30 patient with chronic lumbar pain. KIASTM improve by treating there restrictions (Henie et al 2014). McKenzie extension exercise have shown a superior method for reduction of pain and disability reduction in patient with a LBP with moderate to high quality evidence supporting the superiorly in reducing both pain and disability with patient of LBA (4/4). KIASTM to thoracolumbar fascia by use of accel tool is used to reduce pain and improve quality of life for activity of daily living which also mobilize soft tissue and is very good tool for myofascial release.

VI. CONCLUSION:

KIASTM of thoracolumbar fascia with McKenzie exercise is beneficial for improving quality of life and decreasing pain as compared to McKenzie extension exercise only in subjects with acute lowback ache. Therefore KIASTM is found to improve soft tissue function and range of motion with reducing pain and improve the quality of life.

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