

Effectiveness of Short-Duration MET Intervention For Sacroiliac Joint Pain In Collegiate Students

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Abstract

Background: The sacroiliac joint (SIJ) pain has been found to be one of the upcoming reasons for the lower back pain, but still it is often neglected and ignored as there are no proper guidelines and no proper shreds of evidence for its rehabilitation.

Objectives: To evaluate the effect of a short-interval session of MET on pain and range of motion in sacroiliac joint pain in the college-going students.

Method: A total of five subjects with LBP or buttocks pain have been included in the study after the proper assessment by using Gillet test, FABER Test, Approximation Test, Gapping Test. The result was analyzed by the outcome measures (Pain, Anterior pelvic tilt, Lumber flexion).The Patients received the MET as a treatment for the duration of 2 weeks with 3 sessions per week and after the 2 weeks, the patients were again assessed on the basis of the same outcome measure.

Result: The result of this study showed that even the short duration sessions of MET proved to be effective in improving the pain of the patient due to the Sacroiliac Dysfunction in college students.

Conclusion: The results of this study indicate that the MET for 2 weeks with the 3 sessions per week has been proved to be effective in reducing the pain and ROM in collegiate students.

Implication: As per the evidence the occurrence of sacroiliac joint pain is very high in college students due to prolong sitting hours on the hard surface and MET has already been proved effective in various musculoskeletal conditions so this study will implicate the short period effect of MET on SIJ pain so that they will not have absentee from college.

Key Words: Muscle Energy Technique, Sacroiliac pain, LBP

INTRODUCTION

Sacroiliac joint is one of the strongest joint and often negligible in terms of pain as it is considered as one of the factor for the low back pain. The main function of SI joint is to transfer the weight (upper part of the body to lower, vertebral column to lumbar spine, to sacrum and across the SI joint then to hip joint). This joint also transmit the forces in opposite direction and it also act as shock absorber mainly at the point of heel strike during gait initiation [1]. Nowadays there is an increasing interest in the SIJ as an unrecognized cause of chronic low back pain. In total of all the patients presenting for the assessment of low back pain, the prevalence rate of SIJ pain is found to be about 14%–22% [2, 3]. The SIJ is even more commonly up to 40% [4, 5] suspected as a source of low back pain in patients with prior LF.

There was no clear predisposition to SIJ pain. Nevertheless, etiology has included many factors such as degenerative joint disease, joint laxity, and trauma. In addition, SIJ discomfort is also related to a history of mild direct injuries such as falling on the buttocks. Bernard and Cassidy reported that a history of minor trauma presented 58 percent of those with SIJ dysfunction through history and physical examination. The treatment options currently available for SIJ dysfunction include physical therapy [6] in which MET have been proved to be one of the effective treatments to relieve the pain and discomfort among the population.

Muscle energy technique is a manual procedure that involves muscle contraction in an accurately regulated direction, at varying intensity levels. This usually uses the muscle's strength to lengthen a muscle that is shorted, contract or spastic. It is a versatile technique which is used to address muscular strain, local edema and joint dysfunction as well help in strengthen the weakened muscle or muscle group. MET is mostly indicated for the re-establishment of joint motion associated with articular dysfunction in the case of imbalance in the bony element. The objective of the current study is therefore to assess the effectiveness of MET short-term intervention in sacroiliac joint pain in college students who are sitting for a long period of time and develop low back pain [7, 8].

METHODOLOGY

Study design and sample:

A total of five college students from both the genders were included in the study between the age group of 18-25 years. The assessment was based on the history of pain, discomfort, restriction in the range of motion and the positive Gillet test, FABERs Test, Approximation and Gapping Test [9, 10, 11]. The students having pain due to any kind of traumatic injury, arthritis, cancer pain were excluded. The pre reading of all the subjects were taken at 0 week and the outcome measures used in the study was Pain assessed by NPRS, Anterior pelvic tilt by Goniometer and Lumber Flexion by schober's test. The subjects were treated with the MET session for 2 weeks (3days/week) after the thermotherapy for 10-15 minutes. After the 2 weeks the post readings were noted again with the help of same outcome measures.

Intervention:

After the selection of the topic, five subjects were selected on the basis of inclusion and exclusion criteria and the subjects were assessed with the NPRS for pain, schober's Test for lumbar flexion, Goniometer for Anterior pelvic tilt, Special tests for SI joint (Gillet test, FABER test, Approximation test, Gapping test) positive patients were included in the study. After the baseline measurements the treatment was given to the patients for 2 weeks (3 times per week). After the two weeks the patients were again assessed with the same outcome measures.

MET intervention: Two techniques were used MET for Inflare and Outflare [12]

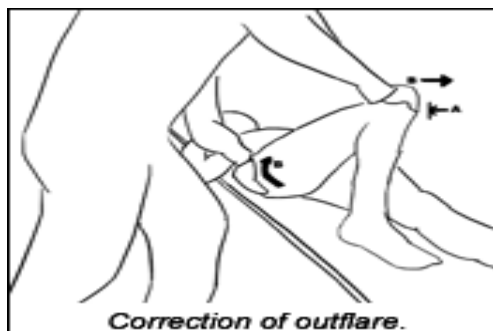
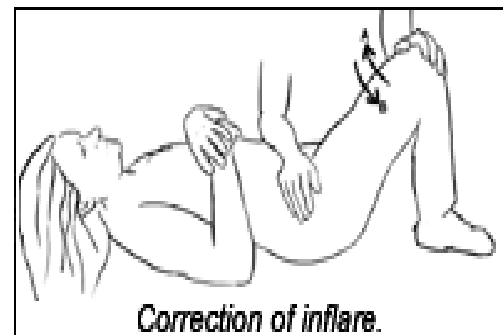
Technique1:

1. In this technique the patient is made to lie in supine and the therapist stands near the affected side.
2. Therapist stabilizes the non affected side ASIS with the left hand and holds the affected side ankle with left hand.
3. The affected side hip is made to flex, abduct and externally rotated.
4. The therapist forearm aligns with the lower leg and the elbow stabilizes the medial aspect of the knee.
5. The patient is then instructed to lightly adduct the hip against the resistance and hold it for 10 seconds while holding the breath.
6. This process is repeated 2-3 times and the leg is slowly straightened while abduction and external rotation is maintained. The leg is then returned back to the starting position.

Technique 2:

1. The position of the patient is supine with the therapist by the side on the involved side.
2. The therapist places the nearest hand under the patient's gluteal region with the finger tips under the sacral sulcus.

3. The other hand holds the patients foot with the limb resting on the forearm.
4. The involved hip is flexed, adducted and internally rotated.
5. The patient is asked to abduct the hip against the resistance for the 10 seconds after that the patient is made to relax and new slack is taken and same procedure is repeated 3-4 times.
6. After the final contraction, adduction and internal rotation are maintained as the leg returns back to the normal position to the table.

**FIG: 1****FIG: 2**

RESULT

The data analysis of this study was done by SPSS software and the result of the current study with the mean age and height of 20.6 years & 5.58ft of the 5 subjects suggests that there was improvement in all the parameters. The results were analyzed within the group by paired t test.

TABLE 1: comparison of the mean and standard deviation within the group with the significance values for pain, lumbar flexion and Anterior Pelvic Tilt

Outcome measures/ Instruments	Pre (Mean $\pm$ SD)	Post (Mean $\pm$ SD)	Mean Difference	Confidence interval	t value	Sig.
PAIN	7.4 $\pm$ 0.894	2.8 $\pm$ 0.837	4.6 $\pm$ 1.342	2.93-6.26	7.66	0.002
LUMBAR FLEXION	18.6 $\pm$ 0.652	19.5 $\pm$ 0.707	-0.9 $\pm$ 0.418	-1.42-0.38	-4.81	0.009
ANTERIOR PELVIC TILT	2.8 $\pm$ 0.837	21 $\pm$ 1.225	-18.2 $\pm$ 1.78	-20.4-15.9	-22.8	0

Significance $P < 0.05$

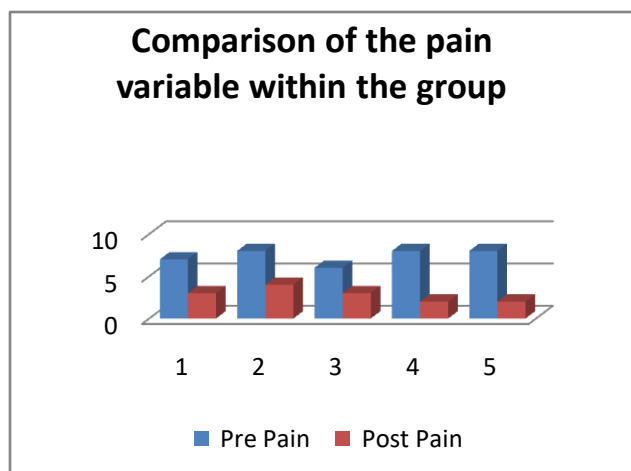


Fig 4

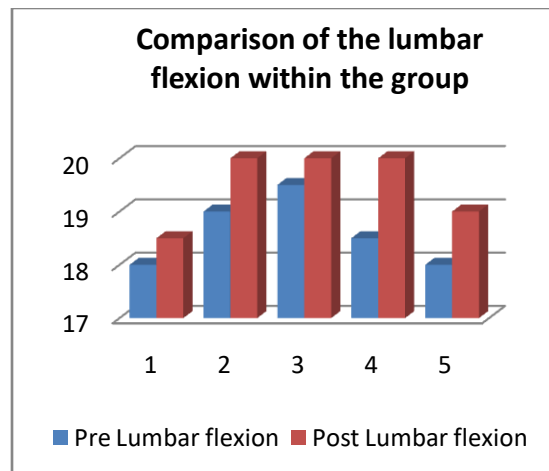


Fig 5

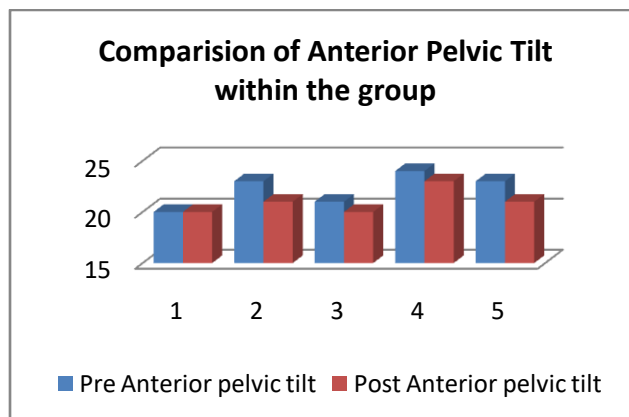


Fig 6

DISCUSSION

beneficial in terms of decreasing pain, increasing the lumbar flexion range and correcting the Range of motion of Anterior Pelvic Tilt. The changes in this study are noteworthy within the group comparison showed significant improvement in all the parameters which was involved as outcome measures.

The result finding of this study compliments with the various studies which gave the evidences that muscle energy technique is useful osteopathic manual process which helps in decreasing the pain component and increasing the ROM. The reason in reduction in the pain due to MET is believed to decrease through neurological mechanism of applied movement (Selkow et al., 2009) ^[13] decreased by Chaitow. This occurs due to the Golgi tendon organs present in the tendons of the against muscles (Deepali Sharma et al., 2014).

In an experimental study it has been hypothesized that there is changes in the inominate tilt by the sacroiliac joint dysfunction so MET is a manual therapy which helps in correction of the imbalance (Michael T. Cibulka et al., 1988)

There is an ample amount of literature available for the effectiveness of MET. Our study also supported the use of MET as it helped in improving all the components in very short duration of time so we should support the use of MET in future also with lot of experiments to get the best result of MET. The limitation of our study was that the number of the sample included was very less and it was kind of experimental study to test the hypothesis so this type of study need to conduct in large group of population to check the actual significance of this type of short duration treatment protocol and the outcome measures used should be more so that no biasness is to be found.

CONCLUSION

The present study concluded that MET was effective in Treating the SI joint Dysfunction in Colligate Students but in terms of significance only Anterior Pelvic Tilt showed Significant results But when we compare the graphs of Pre evaluation and Post Evaluation of all the Parameters used in this study then it is clearly visible that MET only given for 2weeks (3 times per week) proved effective in improving the pain , lumbar flexion and Reducing the Anterior Pelvic Tilt in Sacro-iliac Joint Dysfunction in Collage students sitting for prolong time.

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