



“EFFECTIVENESS OF CLASS – 4 LASER THERAPY ALONG WITH MULLIGAN’S TECHNIQUE IN REDUCTION OF PAIN AND DISABILITY IN SUBJECTS WITH CHRONIC NON-SPECIFIC LOW BACK PAIN: AN EXPERIMENTAL STUDY”

Ankur kumar^{1st}, Dr. Uzma Khan^{2nd}, (prof) Dr. Jasmine Anandabai^{3rd}
PG Student^{1st} Assistant Professor^{2nd} Dean and Principal^{3rd}

Jyotirao Phule Subharti College of Physiotherapy
Faculty of Physiotherapy and Allied Health Sciences
Swami Vivekananda Subharti University, Meerut

ABSTRACT:

Low back pain is currently the most common musculoskeletal issue encountered in practises, affecting a wide spectrum of people. Chronic low back pain lasts longer than 12 weeks and is characterised by pain, muscle weakness, reduced functional ability and psychosocial burden.

AIM:

To find out the effectiveness of high-intensity laser along with Mulligan’s (SNAG) Technique in the treatment of patients with chronic non-specific low back pain.

MATERIAL AND METHODS:

This was an Experimental study comprising a group of 30 patients at the age between 25 and 40 years. Patients were divided into one group only: an examined group of 30 patients who received high-intensity laser along with Mulligan’s (SNAG) Technique in chronic non-specific low back pain. The results were evaluated by the Numeric Pain Rating Scale and Oswestry Disability Index. Clinical findings were evaluated at the same time points for all patients, before treatment, at four weeks following treatment. Statistical analyses were made to compare the differences between pre & post the results of NPRS & ODI. Statistical significance was defined as a P value < 0.05.

RESULTS:

The examined group showed statistically significantly better results in pre & post readings/ scores of Group-A after completion of the treatment (at Four weeks)

DISCUSSION

The objective of the present study was to find the effectiveness of Mulligan's SNAG mobilization along with LASER Therapy (Class-4) in reducing pain, improving quality of life in chronic non specific low back pain and finds the better treatment option for the patient. This study has demonstrated the benefits of which have different methods of application i.e. mobilizing the joints whereby the patient attempts to actively move a painful or stiff joint through its range of motion while the therapist overlays an accessory glide. This study is novel in its own because it involves cost effective treatment options available i.e., SNAG along with LASER Therapy and try to find better treatment option for chronic non specific low back pain patients.

The results of this study demonstrates that the group showed significant improvements with respect to time in improving the disability (ODI) and decreasing the Pain (NPRS) associated with chronic non specific low back pain. There is significant relief in pain was noted in Group over the intervention period. When within group mean values of numeric pain rating scale (NPRS) was analyzed it was found statistically significant in the Group. In the present study reduction in pain level, as quantified by the NPRS, with the application of Mulligan's Technique along LASER Therapy is consistent with the findings of previous studies indicating both the techniques reduced low back pain (Aure et.al. 2003; Hegganavvar et.al. 2015).

Our study result is accordance with the previous study done by Gong W that the repair of the lumbar facet joint's capsular tension may have caused the reported outcomes. The lumbar spine's flexion motions because an increase such strain. Lumbar facet joints, as has been widely reported, have a role in joint stability, discomfort, and proprioception. By enhancing joint mobility and relieving pressure on the capsule, mobilising the painful facet joints with SNAG may help to improve the RE.¹

Whereas Ianuzzi A et al also observed that SNAG is effective for relieving of strain on facet joint capsule, which might lessen patients' perceptions of pain.²

The posteroanterior passive mobilisation approach and the SNAG technique may both have similar outcomes, including the restoration of normal mechanics.³

The improvement in pain reduction in group may be due to the mechanical effect of mobilization. According to Brian Mulligan, there are minute positional faults that can occur from injury or muscular imbalances which have to be corrected and sustained while movements take place. Thus, SNAG which means sustained repositioning of one articular surface on its neighbor while a movement or function is undertaken overcomes and corrects the positional faults occurred in the spine. Once the pain generator is released, normal function returns and the muscle spasm

surrounding the affected joint is resolved.(Heggannavar et.al.2015).

Our study also support the previous study on chronic low back pain patient by Aure F O et.al.(2003) in which they compare the exercise therapy with manual therapy on pain, functional disability, general health status, return to work, and spinal range of motion as a outcome measures and found that Significant improvements in pain, general health, and functional disability were observed in both groups from before to after treatment ($P < 0.01$), and this improvement was maintained throughout the 1-year follow-up. Significantly larger improvements ($P < 0.05$) were found in the manual therapy group compared to the exercise group at all post treatment test sessions.

Disability questionnaires like ODI is a key tools to determine the response to treatment as they provide information about a wide range of functional tasks. There was a statistically significant reduction in questionnaire scores in the group.

In the present study the result was found statistically significant in group. Twomey et al.,(1992) demonstrated repetitive movements are thought to distribute synovial fluid over the articular cartilage and disc, resulting in less resistance to motion, with less resistance to motion subjects may feel free to move and thus may have experienced less pain. In addition to the mechanical explanation as to how mobilization and exercise may influence pain and motion, studies have suggested a neurophysiologic explanation.

Clinical Significance

The study reveals that Mulligan's techniques of the spine improve problems associated with low back pain very well, so these techniques should frequently used by physiotherapist to treat the non specific low back pain.

Limitations of the study

- The sample size of the study was small so the results cannot be generalized to all the patients suffering from chronic low back pain;
- The duration of the study was short and only chronic cases were recruited for the study.
- There was no follow up session in this study.

Future Recommendations

- The effects of Mulligan's techniques in acute and sub acute cases could also be studied.
- The effects of these techniques should be measured at a long term follow-up.
- May be done on gender base.
- Comparitive study may be done.

CONCLUSION:

This study has shown that patient with chronic non-specific low back pain treated with a high-intensity laser along with Mulligan's (SNAG) Technique has significantly reduced low back pain & reduced disability. Its positive effect maintained for 4 weeks. It seems to be an effective, safe and useful physical modality in the treatment of a patient with chronic non-specific low back pain.

Keywords: Chronic non-specific low back pain, Mulligan's Technique , High-intensity Laser,

REFERENCES

- 1.Gong W. The influence of lumbar joint mobilization on joint position sense in normal adults. *J Phys Ther Sci.* 2014;26(12):1985–1987. [[PMC free article](#)] [[PubMed](#)] [[Google Scholar](#)].
- 2.Ianuzzi A, Pickar JG, Khalsa PS. Relationships between joint motion and facet joint capsule strain during cat and human lumbar spinal motions. *J Manipulative Physiol Ther.* 2011;34(7):420–431.
- 3.Shum GL, Tsung BY, Lee RY. The immediate effect of posteroanterior mobilization on reducing back pain and the stiffness of the lumbar spine. *Arch Phys Med Rehabil.* 2013;94(4):673–679A.
- 4.Omkhodion FO, Low back pain in rural community in south west Nigeria. *West Afr J Med* 2002. Apr – Jun 21 (2):87-90.
- 5.Manek and McGregor. Epidemiology of back pain disorders: prevalence, risk factors and prognosis. *Curr opin Rheumatol* 2005 Mar: 17(2): 134-40.
- 6.CARETTE,1994.
- 7.G. Shankar, Vinod Chaurasia. Comparative study of core stability exercises with swiss ball in improving trunk endurance. *International journal of health sci. & research.* Vol 2, issue 5, aug 2012.
- 8.Chapter 4, Pamela k, levangie, Cynthia c. norkin: structure and function of lumbar spine; a comprehensive analysis ,4th edition, published by jaypee brothers.
- 9.Chapter 4, Pamela k, levangie, Cynthia c. norkin: structure and function of lumbar spine; a comprehensive analysis ,4th edition, published by jaypee brothers
- 10.NICE Guideline. Low back pain: early management of persistent non-specific low back pain, may 2009.
- 11.David J. Magee: Orthopedic physical assessment, chapter 9, 5th edition, Published by W.B.Saunders; page no 524.
- 12.Johnson Olubusola Esther. Therapeutic exercises for the management of non-specific low back pain.
- 13.Krismer M, Van tulder M. Strategies for prevention and management of musculoskeletal conditions. Low back pain (non- specific) *Best Pract Res ClinRheumatol* 2007: 21:77-91.
- 14.Schenider, Randoll D, Buchner M,. Why do women have low back pain more than a men?. a representative prevalence study in the federal republic of germany.