A Study on Effectiveness of Snags with Met In Individuals with Mechanical Neck Pain

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ABSTRACT:- **BACKGROUND: Neck is the most mobile region in human body. Mechanical neck pain is a condition that includes minor strain/sprain in the muscles, ligaments or facet joint dysfunction. The reported neck pain prevalence is around [15%] which is higher in females as compared to males. It causes the limitation of cervical range of motion in all directions.**

OBJECTIVE: To find out the effectiveness of SNAGs with MET on reduction of pain, restore the ROM and functional ability in the individuals with mechanical neck pain.

METHODOLOGY: 30 Subjects with mechanical neck pain are taken into consideration. The subjects are selected by the proper screening and fulfilling the inclusive and exclusive criteria and are taken for experimental study. The subjects received SNAGs with MET for a session of 2 weeks with Ultrasound Therapy. Pre and Post test were analyzed based on the outcome measures i.e. Numeric pain rating scale (NPRS), Goniometer and Neck disability index (NDI).

RESULT: The statistical analysis shows that SNAGs with MET is effective in mechanical neck pain.

CONCULSION: The study concludes that SNAGs with MET as more effective in reduction of pain and restore the cervical ROM and functional ability in neck.

KEY WORDS: **Mechanical neck pain, SNAGs, Muscle energy technique, Numeric pain rating scale, Goniometer, Neck disability index.**

INTRODUCTION

Neck is the mobile region in human body, Mechanical neck pain it is most common in between people with a neck bent-forward posture which could, in turn result in referred pain to the upper that could affect the function of both cervical region and upper limb. Mechanical neck pain is a condition that includes minor strain, sprain in the muscles, ligaments or facet joint dysfunction. [1] It is a common disorder prevailing among the different age groups. It is characterized by pain and restricted range of motion which results in performing daily living activities (ADL). [2]

The chronic mechanical neck pain prevalence is 14% which is higher in females (5.7%) as compared to males (3.9%). Mechanical neck pain imposes a noticeable personal and socioeconomic burden on oneself. [3]

Mechanical neck pain is most commonly caused due to zygapophyseal joint dysfunction; zygapophyseal joints might be a source of pain in few subjects caused due to minor trauma or degenerative changes. It may also produce referred pain to upper extremities and head. Mechanical neck pain also results in low back pain, headaches and poor self-rated health. [4]

FIG 1: MUSCLES OF UPPER BACK

The clinical symptoms of mechanical neck pain are little complicated which mainly includes Neck, shoulder, and back pain. It also results in muscle stiffness and weakness of upper extremities, numbness of fingers, vomiting, also reported about depression / anxiety.

The most common muscles involved in mechanical neck pain are upper trapezius, sternocleidomastoid muscle and levator scapulae. [12

Conservative management for mechanical neck pain includes manual therapies, physical exercises, medication and patient education. [6] It also includes various interventions like modalities, mobilization techniques like Sustained natural apophyseal glides (SNAGs), Muscle energy technique (MET).[8]

Though conservative treatment is used in acute or subacute mechanical neck pain for a short term. Surgical management is more effective than conservative treatment in patients with mechanical neck pain. Surgical treatments used are Discectomy – which is the removal of the affected disc in the cervical spine, Cervical Spinal Fusion is the another method used for the treatment of mechanical neck pain. {9}

Physiotherapy management for mechanical neck pain includes Traction, Active and Passive exercises of neck, Ultrasound, Trans cutaneous electrical nerve stimulation and Patient education. [10]

Brian Mulligan's Concept of Mobilization with Movement is the natural continuance of progression in the development of manual therapy from active self-stretching exercises to therapist applied passive physiological movement, to passive accessory mobilization techniques from which SNAGs mobilization technique is been taken which works on the principle of -Comparable Sign, Passive techniques, Accessory glide with active comparable sign, No pain, Repetitions, Description of techniques.

SNAGs are Sustained Natural Apophyseal Glides where the patient actively moves the painful or stiff joint through its range of motion, while the therapist overlays an accessory glide parallel with the treatment. [3]

Sustained natural apophyseal glide (SNAGs) in the treatment of cervical pain helps in restoring normal range of movement of neck, to reduce pain and joint stiffness. [2]

Muscle Energy Technique(MET) are widely recognized approach in treating musculoskeletal dysfunctions.it works on the principle of reciprocal inhibition, a theory that explains that muscles on one side of a joint always relax to accommodate the contraction of muscle on the opposite side of that joint when indirect pressure is applied.

It explains those manipulative techniques where patients actively uses his /her muscles from a controlled position in a specific direction against a distinct counterforce applied by the therapist. [11]

Muscle energy technique is used in conditions like muscle pain, local dysfunction, restricted joint movements, muscle tightness and joint. [11]

NEED OF THE STUDY

Since we know the prevalence rate of people experiencing mechanical neck pain is 14% which is higher in females (5.7%) as compared to males (3.9%). This causes increase in pain, decrease ROM and functional ability of an individual. There are some evidence that has been proven MET and SNAGs individually are found out to be effective. The present study is to find out the efficacy of SNAGs and MET in individuals with mechanical neck pain.

HYPOTHESIS

- ▢ Null Hypothesis: There may not be significant effect of SNAGs with MET in reducing mechanical neck pain and restoring the functional ability of neck.
- ▢ Alternate hypothesis: There may be significant effect of SNAGs with MET in reducing mechanical neck pain and restoring the functional ability of neck.

METHODOLOGY

SOURCE OF DATA: The patients for study are scouted from the Dr. BR

Ambedkar Medical College and Hospital, Department of Physiotherapy, Bangalore.

STUDY DESIGN:

- STUDY TYPE: Experimental study
- SAMPLING TECHNIQUE: Convenient sampling technique
- SAMPLE SIZE: 30
- DURATION OF STUDY: The duration of the study is 6 months

INCLUSION CRITERIA:

- Female aged 20-30 years
- Mechanical neck pain
- Stiffness in sternocleidomastoid and upper trapezius muscle
- Poor posture

EXCLUSION CRITERIA:

- Trauma or localized infection in neck region
- Cervical radiculopathy
- Open sores
- Tumors

OUTCOME MEASURES:

- NPRS (numeric pain rating scale) : Was used to measure pain intensity
- Goniometer
- Neck disability index (NDI)

MATERIALS USED:

- Couch
- Chair
- Cotton
- Assessment form
- Consent form

FIG 2: COTTON

FIG 3: CHAIR

FIG 4: COUCH

PARAMETERS:

- Pain
- Disability
- SNAGS
- MET
- Ultrasound

STUDY PROCEDURE:

Subjects with Mechanical Neck Pain are taken into consideration. Subjects are selected by the proper screening and fulfilling inclusive and exclusive criteria.

Inform consent form was taken from each subject prior to participation, proper instructions were given to the subject about the technique performed. A total of 30 subjects with Mechanical Neck Pain received SNAGS with MET along with Ultrasound.

SNAGS FOR MECHANICAL NECK PAIN

- Patient position: Sitting on chair
- Therapist position: Standing behind the patient

PROCEDURE:

1. While patient sitting on the chair the therapists stands behind by placing his hand's medial border of distal phalanx of thumb on the spine of one vertebrae above affected conditions.
2. The glides were given with tip of thumb placed at an angle of 45 degrees along the eyeball direction reinforced by another thumb.
3. Glides were repeated 6 times and 3 sets were given.

FIG 5: SNAGs PROCEDURE

MET FOR MECHANICAL NECK PAIN

● Patients position: Supine
● Therapist position: Standing behind the patient's head

PROCEDURE:

1. The neck is slightly flexed passively by the therapist, the therapist's right hand is placed over the right pillars of cervical spine
2. The neck is taken to the maximum position of side bending rotation to the right, engaging the barrier.
3. The left hand was placed over the patient's left parietal and temporal areas
4. The patient is then asked to side bend and rotate the head and hold for 5 seconds
5. Post Isometric Relaxation of these muscles following the 5-7 second mild contraction, after which the neck was taken to its normal position and the same procedure repeated for 2 to 3 times.

FIG 6: MET PROCEDURE

ULTRASOUND FOR MECHANICAL NECK PAIN

● Patient position: Sitting on chair
● Therapist position: Standing behind the patient

PROCEDURE:

1. Ultrasound reduces the intensity of pain and it is a safe treatment.

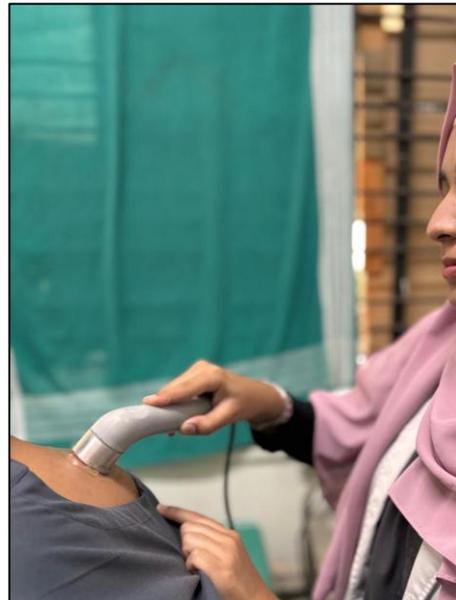2. Low intensity continuous mode is used for15 minutes.

FIG 7: ULTRASOUND

DATA ANALYSIS

Statistical analysis of the data was performed using SPSS 20.0. The Categorical variables were presented as frequency and percentage. The continuous variables were presented as mean ± SD. Pre post comparison was done using paired t test and between group comparisons was done using unpaired t test. A p value <0.05 was considered statistically significant.

Table 1: Distribution based on Age

Age	Frequency	Percent
20 years	10	33.3
21 years	10	33.3
22 years	4	13.3
23 years	4	13.3
24 years	2	6.7
Total	30	100.0

The largest groups are 20 and 21 years old, each with 10 individuals, representing 33.3% of the total population. The 22 and 23-year-old groups each have 4 individuals, making up 13.3% of the population each. The smallest group is 24 years old, with only 2 individuals, accounting for 6.7% of the population.
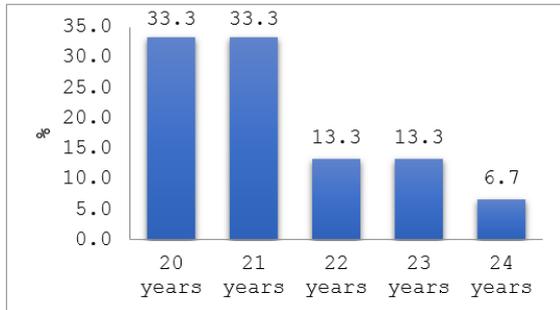
Graph 1: Representation of Age

Table 2: Distribution based on Gender

Gender	Frequency	Percent
Female	22	73
Male	8	27
Total	30	100.0

The gender distribution shows that females make up 73% of the population with 22 individuals, while males account for 27% with 8 individuals.
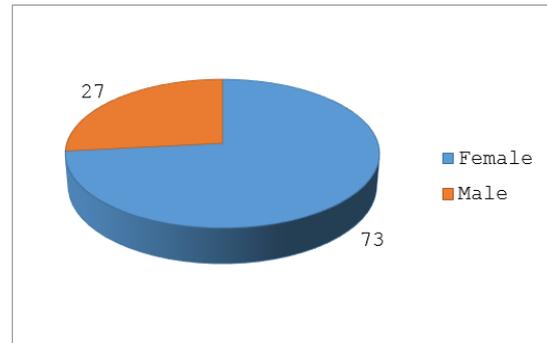
Graph 2: Representation of Gender

Table 3: Showing NDI comparison between Day 1 and Day 10

		Mean	Std. Deviation	Mean difference	t value	p value
NDI	Day1	51.80	14.21	33.80	16.61	$p < 0.001$
	Day10	18.00	6.01			

The average NDI score on Day 1 was 51.80 ± 14.21, which decreased to 18.00 ± 6.01 by Day 10. The average improvement was 33.80, with a t-value of 16.61 and a p-value < 0.001. The analysis shows a significant improvement in NDI scores after Day 10.

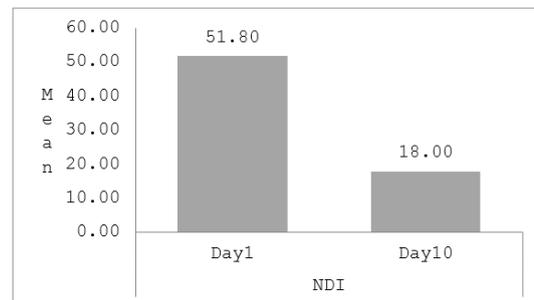Graph 3: Representation of NDI comparison between Day 1 and Day 10

Table 4: Showing NDI comparison for pattern of disability between Day 1 and Day 10

		Day1		Day10	
		Frequency	Percent	Frequency	Percent
NDI	MILD DISABILITY	1	3.3	25	83.3
	MODERATE DISABILITY	11	36.7	2	6.7
	SEVERE DISABILITY	18	60.0		
	NO DISABILITY			3	10.0
	Total	30	100.0	30	100.0

On Day 1, the NDI scores were predominantly severe, with 18 individuals (60%) experiencing severe disability and 11 individuals (36.7%) with moderate disability. Only 1 individual (3.3%) had mild disability. By Day 10, there was a notable improvement: 25 individuals (83.3%) were classified as having mild disability, 2 individuals (6.7%) had moderate disability, and 3 individuals (10%) reported no disability. This shift reflects a significant reduction in disability levels over the 10-day period.

Graph 4: Representation of NDI comparison for pattern of disability between Day 1 and Day 10
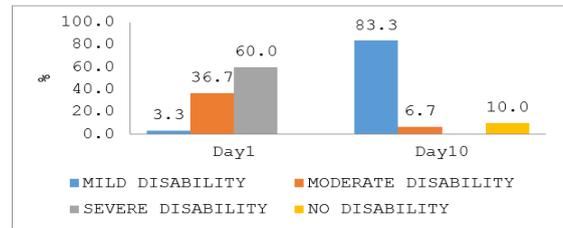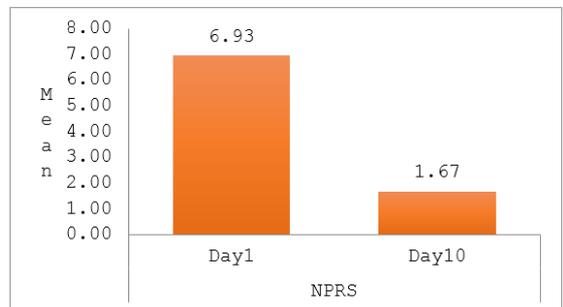

Table 5: Showing NPRS comparison between Day 1 and Day 10

		Mean	Std. Deviation	Mean difference	t value	p value
NPRS	Day1	6.93	1.66	5.27	20.08	p<0.001
	Day10	1.67	0.71			

The average NPRS score on Day 1 was 6.93 ± 1.66, which decreased to 1.67 ± 0.71 by Day 10. The average improvement was 5.27, with a t-value of 20.08 and a p-value < 0.001. This analysis indicates a significant improvement in NPRS scores by Day 10.
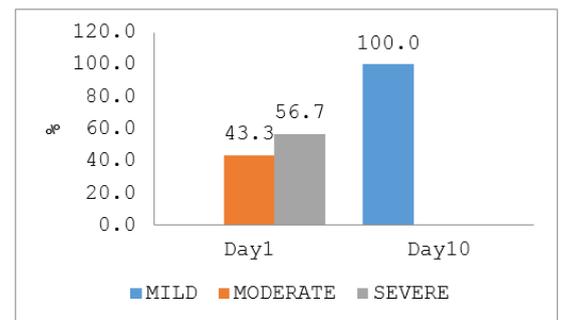
Graph 5: Representation of NPRS comparison between Day 1 and Day 10

Table 6: Showing NPRS comparison for pattern of pain between Day 1 and Day 10

		Day1		Day10	
		Frequency	Percent	Frequency	Percent
NPRS	MILD			30	100.0
	MODERATE	13	43.3		
	SEVERE	17	56.7		
	Total	30	100.0	30	100.0

On Day 1, the NPRS scores indicated that 13 individuals (43.3%) experienced moderate pain, and 17 individuals (56.7%) experienced severe pain. By Day 10, there was a complete shift, with all 30 individuals (100%) reporting mild pain. This dramatic change reflects a significant reduction in pain levels over the 10-day period.

Graph 6: Representation of NPRS comparison for pattern of pain between Day 1 and Day 10

Table 7: Showing FLEXION comparison between Day 1 and Day 10

		Mean	Std. Deviation	Mean difference	t value	p value
FLEXION	Day1	36.93	1.55	2.03	13.10	p<0.001
	Day10	38.97	0.85			

The average FLEXION score on Day 1 was 36.93 ± 1.55, which increased to 38.97 ± 0.85 by Day 10. The average improvement was 2.03, with a t-value of 13.10 and a p-value <0.001. This analysis indicates a significant improvement in FLEXION scores by Day 10.

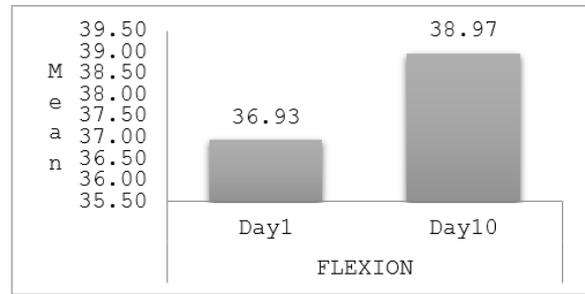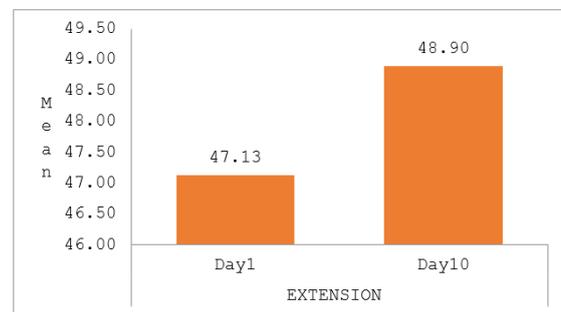Graph 7: Representation of FLEXION comparison between Day 1 and Day 10

Table 8: Showing EXTENSION comparison between Day 1 and Day 10

		Mean	Std. Deviation	Mean difference	t value	p value
EXTENSION	Day1	47.13	1.43	1.77	12.50	p<0.001
	Day10	48.90	0.92			

The average EXTENSION score on Day 1 was 47.13 ± 1.43, which increased to 48.90 ± 0.92 by Day 10. The average improvement was 1.77, with a t-value of 12.50 and a p-value <0.001. This analysis indicates a significant improvement in EXTENSION scores by Day 10.

Graph 8: Representation of EXTENSION comparison between Day 1 and Day 10

Table 9: Showing LATERAL FLEXION RIGHT comparison between Day 1 and Day 10

		Mean	Std. Deviation	Mean difference	t value	p value
LATERAL FLEXION RIGHT	Day1	41.87	1.36	2.23	12.59	p<0.001
	Day10	44.10	0.71			

The average LATERAL FLEXION RIGHT score on Day 1 was 41.87 ± 1.36, which increased to 44.10 ± 0.71 by Day 10. The average improvement was 2.23, with a t-value of 12.59 and a p-value <0.001. This analysis indicates a significant improvement in LATERAL FLEXION RIGHT scores by Day 10.

Graph 9: Representation of LATERAL FLEXION RIGHT comparison between Day 1 and Day 10

Table 10: Showing LATERAL FLEXION LEFT comparison between Day 1 and Day 10

		Mean	Std. Deviation	Mean difference	t value	p value
LATERAL FLEXION LEFT	Day1	41.93	1.26	2.07	13.04	p<0.001
	Day10	44.00	0.74			

The average LATERAL FLEXION LEFT score on Day 1 was 41.93 ± 1.26, which increased to 44.00 ± 0.74 by Day 10. The average improvement was 2.07, with a t-value of 13.04 and a p-value <0.001. This analysis indicates a significant improvement in LATERAL FLEXION LEFT scores by Day 10.

Graph 10: Representation of LATERAL FLEXION LEFT comparison between Day 1 and Day 10
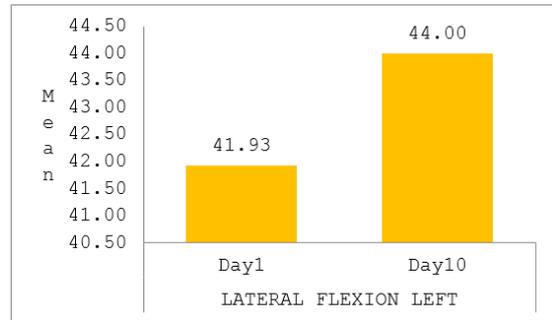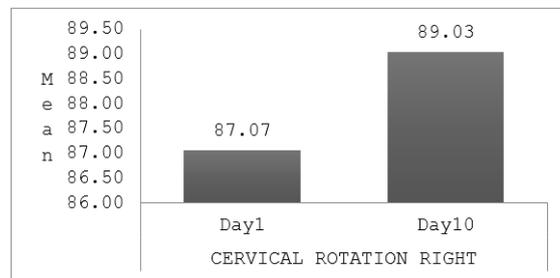

Table 11: Showing CERVICAL ROTATION RIGHT comparison between Day 1 and Day 10

		Mean	Std. Deviation	Mean difference	t value	p value
CERVICAL ROTATION RIGHT	Day1	87.07	1.31	1.97	13.32	p<0.001
	Day10	89.03	0.81			

The average CERVICAL ROTATION RIGHT score on Day 1 was 87.07 ± 1.31, which increased to 89.03 ± 0.81 by Day 10. The average improvement was 1.97, with a t-value of 13.32 and a p-value <0.001. This analysis indicates a significant improvement in CERVICAL ROTATION RIGHT scores by Day 10.

Graph 11: Representation of CERVICAL ROTATION RIGHT comparison between Day 1 and Day 10

Table 12: Showing CERVICAL ROTATION LEFT comparison between Day 1 and Day 10

		Mean	Std. Deviation	Mean difference	t value	p value
CERVICAL ROTATION LEFT	Day1	87.17	1.29	1.90	12.32	p<0.001
	Day10	89.07	0.69			

The average CERVICAL ROTATION LEFT score on Day 1 was 87.17 ± 1.29, which increased to 89.07 ± 0.69 by Day 10. The average improvement was 1.90, with a t-value of 12.32 and a p-value <0.001. This analysis indicates a significant improvement in CERVICAL ROTATION LEFT scores by Day 10.

Graph 12: Representation of CERVICAL ROTATION LEFT comparison between Day 1 and Day 10
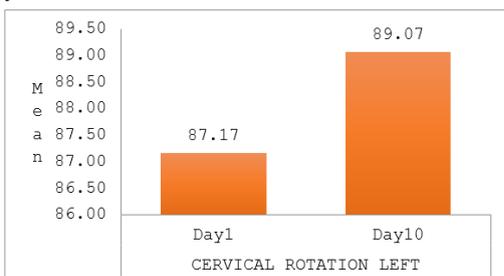
RESULTS

The study aimed to assess the effectiveness of SNAGs with MET in managing pain in patients with mechanical neck pain using SPSS 20.0, with categorical variables presented as frequency and percentage. The continuous variables were presented as mean +_ standard deviation. pre- post comparison was done using paired t test and between group comparisons was done using unpaired t test. A p value <0.05 was considered statistically significant.

The age distribution of the 30 participants revealed that the largest groups are 20 and 21 years old, each with 10 individuals representing 33.3% of the total population. The 22 and 23 year old group each have 4 individuals, making up 13.3% of the population

each. The smallest group is 24 years old, only with 2 individuals, accounting for 6.7% of the population.

The gender distribution shows that females makes up 73% of the population with 22 individuals, while males account for 27% with 8 individuals.

Comparing pre and post intervention outcomes, significant improvement were observed in both NDI scale interpretation and NPRS scale interpretation and goniometric measurement results. The average NDI score on day 1 was 51.80_+ 14.21, which decreased to 18.00+_ 6.01 by day 10. The average improvement was 33.80, with a t-value of 16.61 and a p-value <0.001. the analysis shows a significant improvement in NDI scores after day 10.

Additionally all participants transitioned from moderate to severe disability on day 1 to minimal disability on day 10.

Similarly NPRS score showed a significant decrease in pain levels from day 1 to day 10, Day 1 was 6.93_+ 1.66, which decreased to 1.67_+ 0.71 by Day 10. The average improvement was 5.27 with a t value of 20.08 and p value < 0.001. the analysis indicates a significant improvement in NPRS scores by Day 10.

Similarly the goniometric measurements for all the cervical movements which were assessed on Day 1 was significantly increased by Day 10

FLEXION- The average flexion score on Day 1 was 36.93+_ 1.55, which increased to 38.97+_0.85 by Day 10.

EXTENSION- The average extension score on Day 1 was 47.13+_ 1.43, which increased to 48.90+_0.92 by Day 10.

LATERAL FLEXION RIGHT- The average lateral flexion right score on Day 1 was 41.87+_1.36, which increased to 44.10+_0.71 by Day 10.

LATERAL FLEXION LEFT- The average lateral flexion left score on Day 1 was 41.93+- 1.26, which increased to 44.00_+- 0.74 by Day 10.

CERVICAL ROTATION RIGHT- The average cervical rotation right score on Day 1 was 87.07_+0.81 by Day 10.

CERVICAL ROTATION LEFT- The average cervical rotation right score on Day 1 was 87.07+_1.31, which increased to 89.03+_0.81 by Day 10.

Overall the findings suggest that the intervention effectively alleviated symptoms and improved functional outcomes in individuals with Mechanical Neck Pain. The study highlights the potential of SNAGs with MET as a promising treatment option for managing Mechanical Neck Pain and Disability.

DISCUSSION

This study aims to find out the efficacy of SNAGs with MET on reduction of pain, restore ROM, and improving functional disability in individuals with Mechanical neck pain. Mechanical neck pain is a musculoskeletal condition that includes minor strain, sprain in the muscles, ligaments or facet joint dysfunction. It is a common disorder prevailing among the different age groups. It is characterized by pain and restricted range of motion which results in performing daily activities (ADL).

In this study, Subjects with Mechanical neck pain are taken into consideration. subjects are selected by proper screening and fulfilling the inclusive and exclusive criteria. 30patients diagnosed with mechanical neck pain, restricted range and functional disability was selected and grouped into experimental group. The Experimental group received SNAGs with MET along with ultrasound for 10 minutes. the treatment duration was about 20-30 minutes.

The Outcome measures used were Neck Disability Index to measure functional disability, Numerical pain rating scale (NPRS) to measure pain intensity and Goniometer to assess the ROM. Each measurement was assessed on the Day 1 of treatment and the day 10 of the treatment. Then data were analyzed statistically.

Statistical data reveals that SNAGs with MET along with ultrasound showed significant effect in individuals with Mechanical neck pain.

According to Fred Mitchell, MET can be defined as technique where voluntarily contraction of the agonist muscle in précised position by the therapist, in specific duration and against counter force. It mainly lengthens the muscle fibers and fascia, mobilize joints where movements are restricted and regain muscle balance.

Main physiological effects proposed by the application of MET are to improve joint range of motion, reduce pain and restore functional ability of the individuals. The reason behind this physiological effect is due to the neurological mechanism that may follow use of MET.

• The effect may result from the inhibitory Golgi tendon reflex activated during the isometric contraction that leads to reflex relaxation of the muscle as a result of Post Isometric Relaxation (PIR), (Mitchel et al 1979 & Lewit 1986)

• An alternative reflex effect has been suggested in which an isometric contraction of the antagonists of affected muscle induce relaxation via Reciprocal Inhibition (RI),(Liebenson 1996 & Levin 1954).

SNAGs are Sustained Natural Apophyseal Glides where the patient actively moves the painful or stiff joint through its range of motion, while the therapist overlays an accessory glide parallel with the treatment.

Sustained natural apophyseal glide (SNAGs) in the treatment of cervical pain helps in restoring normal range of movement of neck, to reduce pain and joint stiffness.

In this study, there has been an decrease in pain and reduction of functional disability by the application of SNAGs with MET along with ultrasound for Mechanical neck pain. The reduction of the pain and improved functional disability in individuals with neck pain is seen.

With respect to NPRS, The average NPRS score on Day 1 was 6.93 ± 1.66, which decreased to 1.67 ± 0.71 by Day 10. The average improvement was 5.27, with a t-value of 20.08 and a p-value < 0.001. This analysis indicates a significant improvement in NPRS scores by Day 10.

On Day 1, the NPRS scores indicated that 13 individuals (43.3%) experienced moderate pain, and 17 individuals (56.7%) experienced severe pain. By Day 10, there was a complete shift, with all 30 individuals (100%) reporting mild pain. This dramatic change reflects a significant reduction in pain levels over the 10-day period.

With respect to NDI, The average NDI score on Day 1 was 51.80 ± 14.21, which decreased to 18.00 ± 6.01 by Day 10. The average improvement was 33.80, with a t-value of 16.61 and a p-value <0.001. The analysis shows a significant improvement in NDI scores after Day 10.

On Day 1, the NDI scores were predominantly severe, with 18 individuals (60%) experiencing severe disability and 11 individuals (36.7%) with moderate disability. Only 1 individual (3.3%) had mild disability. By Day 10, there was a notable improvement: 25 individuals (83.3%) were classified as having mild disability, 2 individuals (6.7%) had moderate disability, and 3 individuals (10%) reported no disability. This shift reflects a significant reduction in disability levels over the 10-day period.

With respect to goniometric measurements,

The average FLEXION score on Day 1 was 36.93 ± 1.55, which increased to 38.97 ± 0.85 by Day 10. The average improvement was 2.03, with a t-value of 13.10 and a p-value <0.001. This analysis indicates a significant improvement in FLEXION scores by Day 10.

The average EXTENSION score on Day 1 was 47.13 ± 1.43, which increased to 48.90 ± 0.92 by Day 10. The average improvement was 1.77, with a t-value of 12.50 and a p-value <0.001. This analysis indicates a significant improvement in EXTENSION scores by Day 10.

The average LATERAL FLEXION RIGHT score on Day 1 was 41.87 ± 1.36, which increased to 44.10 ± 0.71 by Day 10. The average improvement was 2.23, with a t-value of 12.59 and a p-value <0.001. This analysis indicates a significant improvement in LATERAL FLEXION RIGHT scores by Day 10.

The average LATERAL FLEXION LEFT score on Day 1 was 41.93 ± 1.26, which increased to 44.00 ± 0.74 by Day 10. The average improvement was 2.07, with a t-value of 13.04 and a p-value <0.001. This analysis indicates a significant improvement in LATERAL FLEXION LEFT scores by Day 10.

The average CERVICAL ROTATION RIGHT score on Day 1 was 87.07 ± 1.31, which increased to 89.03 ± 0.81 by Day 10. The average improvement was 1.97, with a t-value of 13.32 and a p-value <0.001. This analysis indicates a significant improvement in CERVICAL ROTATION RIGHT scores by Day 10.

The average CERVICAL ROTATION LEFT score on Day 1 was 87.17 ± 1.29, which increased to 89.07 ± 0.69 by Day 10. The average improvement was

1.90, with a t-value of 12.32 and a p-value <0.001. This analysis indicates a significant improvement in CERVICAL ROTATION LEFT scores by Day 10.

Hence, study reveals that SNAGs with MET along with ultrasound shows greater improvement than standard physical therapy treatment in reducing pain, functional disability and restoring ROM in individuals with Mechanical Neck Pain.

SUMMARY

A Study on efficacy of SNAGs with MET in patients with mechanical neck pain over the cervical region muscles involving upper trapezius and sternocleidomastoid, due to repetitive neck movements like neck flexion, extension, lateral flexion and cervical rotation. In this study subjects with mechanical neck pain and the upper trapezius pain are taken into consideration the samples are collected from Dr. BR Ambedkar medical college department of Physiotherapy. From a large number of subjects with Mechanical neck pain are selected by proper screening and fulfilling the inclusive and exclusive criteria. 30 patients were diagnosed with mechanical neck pain and functional disability were selected. The experimental study received SNAGs with MET along with ultrasound to reduce pain, improve range of motion and to improve functional ability. Treatment duration was about 20-30 minutes each session on regular period of 6 days per week for 10 days. The outcome measures used were NPRS (Numeric pain rating scale) to measure the pain intensity, NDI (Neck disability index) to assess the functional disability, and Goniometer to measure the range of motion. Each measurement was assessed on day 1 of the treatment and day 10 of the treatment then data was analyzed statistically. The Statistical data reveals SNAGs with MET for patients with mechanical neck pain has showed significant effect in reducing pain and to improve range of motion and functional ability in the individuals.

CONCLUSION

The purpose of this was to find the effectiveness of SNAGs with MET in patients with mechanical neck pain, 30 patients were treated with SNAGs with MET along with ultrasound was given for 10 minutes the overall treatment time was about 20-30 minutes. Based on statistical analysis this study showed greater improvement in reducing pain, functional disability and restoring ROM in individuals with Mechanical Neck Pain.

LIMITATIONS

▢ The study was conducted on a small sample size might affect the generalization of results.
▢ Duration of study was less
▢ Age group was only between 20-25years
▢ All measurements were taken manually and this may introduce human error which could affect the reliability of the study

RECOMMENDATION FOR FURTHER ENHANCEMENT

▢ Long term follow up is needed to evaluate whether there occurs any sustained or carry over effect after treatment.
▢ To establish greater efficacy of the treatment, the study should be undertaken in large scale randomized clinical trial that would include a large sample size and a longer follow up.
▢ Studies should be conducted on both acute and chronic cases
▢ Studies can be conducted on individuals of all age group.
▢ For more reliability and validity, long term study must be carried out.
▢ Further study can be done to check the effects of these techniques on other soft tissue related and joint restriction related conditions.

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