

## A Comparative Study between Transcutaneous Electrical Nerve Stimulation versus Mulligan SNAG (C<sub>1</sub>-C<sub>2</sub>) Technique for Occipital Neuralgia

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### ABSTRACT

**Background and Purpose:** Occipital neuralgia is a third most common headache syndrome following migraine and tension type headache. Our study aims to compare the effect of Transcutaneous Electrical Nerve Stimulation versus Mulligan's Snag Technique (c<sub>1</sub>-c<sub>2</sub>) for occipital neuralgia.

**Methods:** A sample of 30 patients within the age group of 30- 50 years with Occipital Neuralgia were randomly divided into two groups, Group a(n= 15)and group (n= 15). The subjects in group A is treated with TENS (Transcutaneous Electrical Nerve Stimulation) and the subjects in group B is treated with Mulligan's SNAG Technique. The subjects' pain and disability is assessed by VAS and Headache Disability Inventory (HDI). The pre and Post test results were tabulated and assessed.

**Results:** The study concludes that there was statistically significant improvement of functional ability in group B compared to group A in response to treatment

**Conclusion:** Based on the result, this study concluded that Mulligan's snag mobilisation was effective in reduction of pain and improvement of functional ability of neck than TENS with Occipital neuralgia.

**Key Words:** TENS, Mulligan's Technique, VAS, HDI.

### INTRODUCTION

Occipital neuralgia is a third most common headache syndrome following migraine and tension type headache. The exact mechanism of occipital neuralgia are still unknown recently ,but some literature pointed out that whiplash injury compression of c<sub>2</sub> nerve and compression of upper cervical root by arthritic changes in the spine are leading possible cause for occipital neuralgia. <sup>(1)</sup>

Occipital neuralgia is paroxysms of severe occipital pain than often resembles severe migraine that pain may be so severe that blood pressure rises to extreme level. <sup>(2)</sup>

The occipital nerve takes most of its origin from the c<sub>2</sub> nerve root and possibly also the upper cord, can cause occipital neuralgia. <sup>(3)(4)</sup>

Symptoms of occipital neuralgia are Aching, burning, and throbbing pain at skull, Pain on one or both sides of the head, Pain behind the eye, Sensitivity to light, Tender scalp, Pain when you move your head.

TENS (Transcutaneous Electrical Nerve Stimulation) is a more familiar treatment, whereby electrical impulses, without needles are pass through the skin to treat the nerve endings and stop them from

feeling pain. It is highly effective for headache relief. TENS device provided relief to 81% of migraine and other type headache. (5)

The MULLIGAN'S SNAG TECHNIQUE are used throughout the spine, rib cage, and sacroiliac joint. It is gliding mobilisation and should be performed pain free. (6) SNAG technique stands for Sustained Natural Apophyseal Glides. Patient suffered from a headache of upper cervical origin this technique can be applied.

## METHODS

The study was conducted at outpatient Department in JKKMMRF College of physiotherapy under supervision of concerned authority. A sample of 30 patients within the age group of 30- 50 years with Occipital Neuralgia were randomly divided into two groups, A total number of 30 subjects were selected by random sampling method after due consideration to inclusion criteria. They were divided into two groups. Group A and Group B with 15 subjects in each group. Group A received TENS (Transcutaneous Electrical Nerve Stimulation) in addition to selected Physiotherapy programme). (8) Group B received Mulligan s SNAG technique in addition to selected physiotherapy programme for a total duration of 4 weeks, 5 days per week, 1 session per day. The parameter used for this study was VAS scale and Headache Disability Inventory

## RESULTS

The comparative mean value, mean difference, standard deviation, and unpaired 't' value between pre and post-test value of Visual Analogue Scale in group A and group B.

VAS pain response	mean	Mean difference	Standard deviation	Unpaired 't' value
Pre test	4.8	0.73	1.70	1.4
Post test	4.0			

## VISUAL ANALOGUE SCALE FOR GROUP A AND GROUP B

(HDI). Both males and females are included in this study. Cervical instability, cord compression, Spinal tumour, recent motor vehicle accident involving cervical spine are excluded from the study.

## PROCEDURE:

### GROUP A (TRANSCUTANEOUS ELECTRICAL NERVE STIMULATION)

The patient was in sitting position with back support and therapist may be standing behind the patient.

The therapist places the pad electrode on the neck.

Then the intensity should be raised slowly according to the patient tolerance.

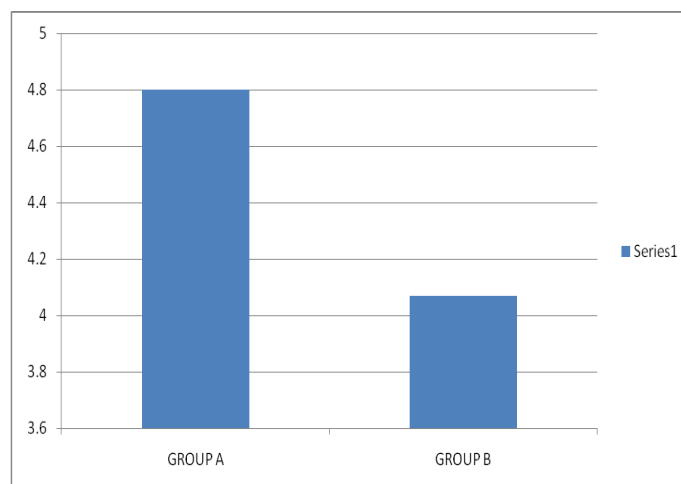
PARAMETER	ACUTE PAIN (SENSORY TENS)	CHRONIC PAIN (MOTOR TENS)
Pulse duration/width	60-100µsec	150-250µsec
Treatment time	15-30 min	in

### GROUP B (MULLIGAN'S SNAG TECHNIQUE)

The patient was in sitting position and the therapist may be standing behind the patient. The therapist would place the thumb on the spinous process of the vertebra.

Move spinous process upward towards the eyeball direction & maintain the glide and ask the patient to turn (rotation) his head slowly in painful direction, sustain the mobilization until head turn to the midline.

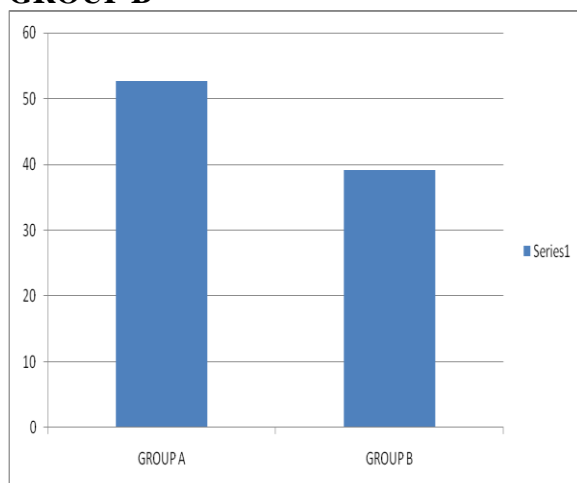
(7) Four repetitions of each glide were given and maintain for 10 seconds at end range.



The comparative mean value, mean difference, standard deviation and unpaired 't' value between pre and post test value of Headache Disability Inventory between group A and group B.

Headache Disability Inventory	Mean	Mean difference	Standard deviation	Unpaired 't' value
Pre test	52.7	13.5	12.9	2.8
Post test	39.2			

### HEADACHE DISABILITY INVENTORY FOR GROUP A AND GROUP B



### DISCUSSION

The Visual Analogue Scale (VAS) is common form of response option in health outcomes has summarized the evidence for the measurement properties of the VAS. A type of outcomes scale widely used in physical therapy we concluded that there is sufficient evidence that VAS data are ordinal. VAS should be treated as such analysed appropriately from a statistical by using non-parametric statics. <sup>(9)</sup>

The severity of headache was measured by Headache Disability Inventory (HDI). It 25 item with 2 sub scale (emotional and functional). There was significant difference was found in severity of headache among all two groups immediately after treatment. Manual therapy group showed more reduction in headache disability scores. HDI was useful in assessing the impact of headache. <sup>(10)</sup>

In analyses and interpretation of VAS in group A and group B. The tabulated t unpaired t value of which showed that there was a statistically significant difference at 0.0001 level between mean difference of group A and group B .The pre vs post test mean of group A was 4.8 the mean difference of pre vs post value of group B was 4.07 and mean difference of group A and group B was 0.73 which showed that there was statistically significant reduction in occipital neuralgia in response to treatment in group B when compared to group A.

In analyses and the interpretation of HDI in group A and group B. The tabulated unpaired t value of which showed that there was a statistically significant at level between mean difference of group A and

group B. The pre vs post test mean of group A was 52.7 the mean difference of pre vs post mean group B was 39.2 and mean difference of group A and group B was 13.5 which showed that there was statistically significant reduction in occipital neuralgia in response to treatment in group B when compared to group A. Therefore the present study was accepting the alternate hypotheses and rejecting the null hypotheses.

## CONCLUSION

Based on the result, this study concluded that Mulligan's snag mobilisation was effective in reduction of pain and improvement of functional ability of neck than TENS with Occipital neuralgia.

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