

Effectiveness of Short Surged Faradic Current in Patients with Cervicogenic Headache

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Abstract: Background: cervicogenic headache present as unilateral pain that start in neck it is common chronic and recurrent headache that usually start after neck movement it is mostly seen in the population who has an incorrect posture it usually accompanies reduce range of motion of neck. Commonly seen in people who are 20 to 44 year old its prevalence among patients with headache is 0.4 to 4%. Compared with other headache patients this patient have very cranial muscle tenderness on painful side so study is needed to compare effectiveness of short surged faradic current in patient with cervicogenic headache. Aim: to study the effect of short surged faradic current in patient with cervicogenic headache and improving range of motion and reduce pain in patient with cervicogenic headache. Method: total 25 patients were selected depending on inclusion and exclusion criteria the purpose of study and nature of intervention was properly explained to subject. The subject treated with short search variadic current over trapezius muscle with 30 repetitions three sets. The outcome measures were NUMERICAL PAIN RATING SCALE and GONIOMETER The intervention applied for 5 days per week. assessment were taken pre and post intervention. data analysis was done using SPSS version 21. Result: the study states that pain and range of motion in patients with cervicogenic headache showed improvement in post intervention. Conclusion: the study concludes that the effectiveness short surged faradic current with the patient with cervicogenic headache showed significant improvement in pain and range of motion

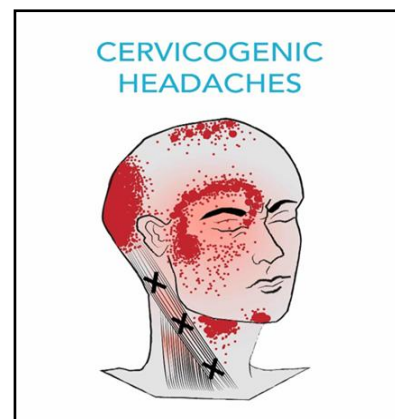
Keywords: cervicogenic headache, surge faradic current, lateral flexion. Extension

1. Introduction

Cervicogenic headache (CH) is a secondary headache caused by a disorder of the cervical spine and its disc or bony and/or periarticular components and is often accompanied by neck pain.¹ The diagnostic criteria for CH are: (1) clinical and/or imaging evidence of a disorder or lesion within the cervical spine or soft tissues of the neck, which is known to cause headache; and (2) evidence of causation demonstrated by at least two of the following: headache has developed in temporal relation to the onset of the cervical disorder or appearance of the lesion, headache has significantly improved or resolved in parallel with improvement in or resolution of the cervical disorder or lesion, cervical range of motion (ROM) is reduced and headache is made significantly worse by provocative maneuvers, and/or headache is abolished following diagnostic blockade of a cervical structure or its nerve supply.^{2, 3} Such pain shows a marked topographic course, usually starting in the cervical area, extending to the oculo-fronto-temporal area, and accentuated by sustained neck positions or pressure over the occipital area.⁴ The prevalence of CH in the general population has been reported to be 2.2%–4.1% and appears to predominate in women four times more than in men.^{4, 5}

The cause of this headache may lie in the convergence in the trigeminal - cervical caudalis nucleus of the afferent branches of the trigeminal and superior cervical spinal

nerves.⁶ This convergence could explain why patients with CH often present with headaches corresponding to the cervical and trigeminal dermatomes. Hence, sustaining a concussion or whiplash injury with neck pain and limitation of movement can lead to the development of CH.⁷



This complex etiology means that CH benefits from multidisciplinary treatment.⁸ The medical approach usually begins with the administration of drugs, but they do not resolve the source of the problem and can lead to overuse.⁹ Invasive procedures, such as anesthetic and corticosteroid blocks¹⁰ of the occipital or cervical nerves¹¹, pulsed radiofrequency¹⁰, and cryoanalgesia⁹, have been suggested to reduce pain transiently. There is now a preference for more conservative interventions, such as those of

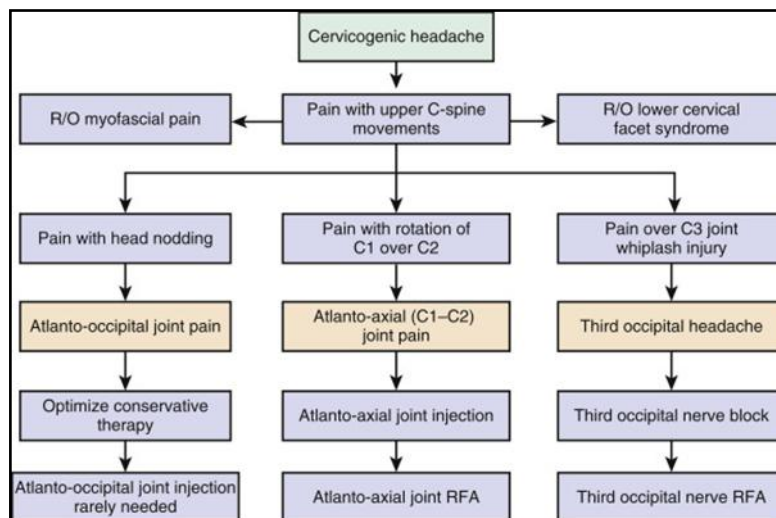
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physiotherapy, which have a greater capacity to resolve the symptomatology in the long term.⁸ Noninvasive treatment techniques consist mainly of electrotherapy, manual therapy (MT), and exercise prescription. MT seems to be one of the

options with the greatest potential for the treatment of CH, but the techniques to be applied are varied and there is no consensus on which are the most indicated.^{4, 12, 13}



Electrical muscle stimulation (EMS) in the form of surged faradic current is the application of electrical current to elicit a muscle contraction. Use of EMS for orthopedic and neuromuscular rehabilitation has been given significantly in recent years. Electrical muscle stimulation gives relaxation to spasm. Increased production of endorphins is believed to be a consequence of electrical stimulation. This natural, body generated analgesic is produced normally when the body detects a painful stimulus.⁸

Researchers have found that the body may be pooled into increased production of endorphins by non - painful electrical stimulation. The circulatory stimulation is by the “pumping action” of the contracting musculature and there is enhancement of Reticuloendothelial response to clear the waste products.^{9,10, 11}

2. Materials & Methods

- Surged faradic current modality
- Goniometer
- Numerical pain rating scale.
- Pen
- Paper



3. Procedure

This study protocol was presented for approval in front of protocol committee an institutional ethic committee of nanded physiotherapy college and research centre, Nanded.

Total 25 patients of cervicogenic headache were selected from the outpatient department of physiotherapy out of 25 patients 15 we're female and 10 we're male. Subject fulfilling the inclusion and exclusion criteria were selected The purpose of study and nature of intervention was properly explained to the subject. return informed consent was taken prior to assessment.

During pre treatment and post treatment assessment of cervical range of motion an pain was measured by goniometer and numerical pain rating scale the treatment was given for 3 sets 30 repetitions 5 session PER WEEK post treatment assessment was taken after completion of session.



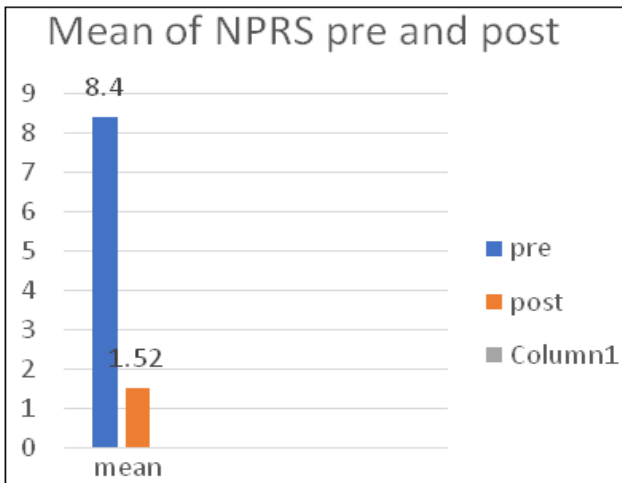
Figure 1: Short surged Faradic current

Statistical Analysis

The Study was conducted with total 25 patients with short surged faradic current over trapezius with 30 repetitions 3 sets. Results of this study were analysed in terms of reduced neck pain, increase range of motion. Paired ‘t’ test and unpaired ‘t’ test were used to analyze the pre and post differences for NPRS, endurance test and neck disability score. The level of significance was set at $p < 0.05$ for all tests. Paired sample ‘t’ test showed significant improvement in NPRS, lateral flexion and extension. Post treatment in population but unpaired ‘t’ test is showing insignificant results in NPRS, lateral flexion and extension.

1) Numerical pain rating scale mean values pre and post test

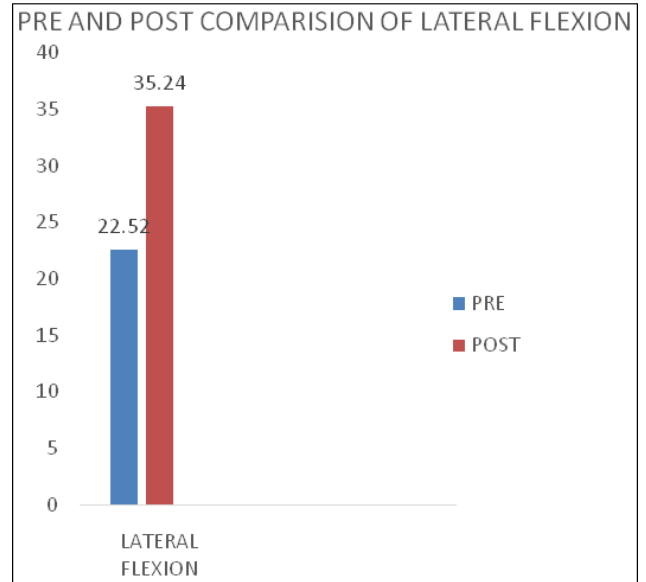
Groups	Mean	Standard Deviation	Mean Difference	P Value
Pre	8.4	1.29	- 6.880	<0.0001
Post	1.52	1.12		



Pre intervention mean and standard deviation of NPRS was 8.36 ± 1.26 whereas post intervention mean and standard deviation of NPRS was 1.44 ± 1.134

Pre and Post Value of Lateral Flexion

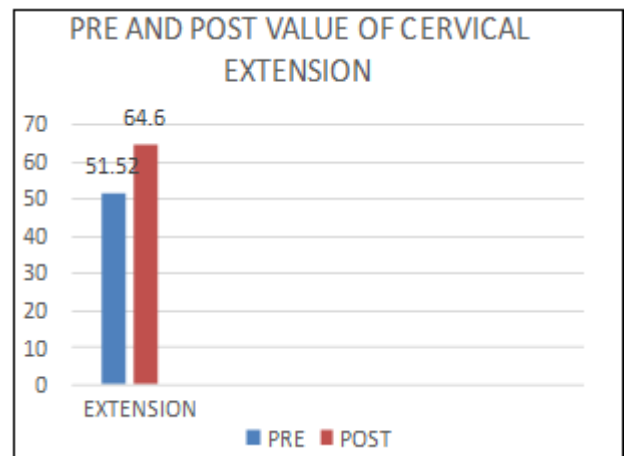
Groups	Mean	Standard Deviation	Mean Difference	P Value
Pre	22.52	9.71	12.720	<0.0001
Post	35.24	8.19		



Mean and standard deviation of lateral flexion was 35.84 ± 8.17 In Paired sample t - test pre - intervention mean and standard deviation of lateral flexion was 22.52 ± 9.69

Pre and Post Value of Extension

Groups	Mean	Standard Deviation	Mean Difference	P Value
Pre	51.52	9.014	13.080	<0.0001
Post	64.6	5.017		



Pre intervention mean and standard deviation of Extension was 50.6 ± 9.20 whereas post intervention mean and standard deviation of extension was 64.4 ± 6.4

4. Result

Data analysis was done using the Statistical Package for Social Sciences (SPSS version 21). Basic descriptions were presented in the form of mean and Standard deviation. The data were assessed for normality using the ShapiroWilk test. Paired 't' test and Unpaired t - test was used to analyze the pre and post differences for extension and lateral flexion. Pre and post NPRS scores were compared using Wilcoxon ranks signed test. The level of significance was set at $p < 0.05$ for all tests.

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Pre intervention mean and standard deviation of NPRS was 8.36 ± 1.26 whereas post intervention mean and standard deviation of NPRS was 1.44 ± 1.134

Pre and post NPRS scores were compared using Wilcoxon ranks signed test. The level of significance was set at $p < 0.05$ for all tests

5. Discussion

Musculoskeletal pain is the major cause of morbidity in the working age population and is among the leading cause of disability in other age groups.

Cervicogenic headache present as a unilateral pain that starts in the neck and is referred from the bony structure or soft tissue of neck. It usually start after neck movement and is often accompanied a reduced range of motion and pain in neck.

AIMS IS To find out whether short surged faradic current is effective in patients with cervicogenic headache.

There are numerous studies were performed on the patients with cervicogenic headache using manual therapy, electrotherapy. Till now, no studies were found using short surged faradic current in patients with cervicogenic headache.

So due to lack of research on this study. It is important to evaluate the effect of short surged faradic current in patients with cervicogenic headache.

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In Paired sample t - test pre - intervention mean and standard deviation of lateral flexion was 22.52 ± 9.69 whereas Post intervention mean and standard deviation of lateral flexion was 35.84 ± 8.17

Pre intervention mean and standard deviation of Extension was 50.6 ± 9.20 whereas post intervention mean and standard deviation of extension was 64.4 ± 6.4

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Kshama. S. Shetty, A Joseph oliver Raj have found that short surged faradic current show beneficial effect in increase range of motion and reduced pain in the upper trapezius muscle of myofacial trigger point.

Hou CR, Tsai sc, chengkf, chungkc, Hong Cz showed the immediate effect of various physical therapeutic modalities on cervical myofacial pain and trigger point sensitivity.

Akansha A nalawade, poonam H patil - 2020 conducted study on comparison between short surged faradic current and Transcutaneous electrical nerve stimulation on myofacial trigger point on trapezius and it's concluded that patient who treated with ssf and phonophoresis had significant improvement clinically and statistically and improve range of motion and VAS and reduction in trapezius palpation.

Dr. Sneha Kumbhani, Pranjaltadvi, Maheksuthar, Anjali chauhan have found that laser therapy and short surged faradic current both the interventions are effective in alleviation of myofacial trigger point on upper trapezius but the Short surged faradic current is more effective for treatment of myofacial trigger point on upper trapezius than laser therapy in improving cervical range of motion and reducing pain.

Sharwarishinde, rupalishevakar concluded that short surged faradic current and self stretching are given clinically beneficial in reducing pain and increase range of motion.

With respective to above result my study state that short surged faradic Current have got a beneficial effect in reducing the pain intensity and increase range of motion in patient with cervicogenic headache due to difference in pre and post value in the subjects during pre and post treatme

6. Conclusion

The study concluded that short surged faradic Current have got a beneficial effect in reducing the pain intensity and increase range of motion in patient with cervicogenic headache due to difference in pre and post value in the subjects

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