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A Study to Compare the Effectivenss of Soft Tissue Mobilization with Cryotherapy Versus Stretching and Strengthening in Cervicogenic Headache Among Young Adults

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ABSTRACT

Cervicogenic headache is a secondary headache caused by disorders in the cervical spine (neck) particularly involving the upper cervical nerves, joints or muscles. Pain is typically one- sided and originates from the neck, radiating to the head. The aim of the study is to find out the effectiveness of soft tissue mobilization with cryotherapy versus stretching and strengthening in cervicogenic headache among young adults. The study design is Quasi experimental study. The 30 samples were divided into 2 groups after fulfilling the inclusion and exclusion criteria. GROUP A- were treated with soft tissue mobilization with cryotherapy (n=15) and GROUP B- with stretching and strengthening exercise(n=15). The test of pre and post were statistically analysed and it was found that both the groups improved and there is significantly (P<0.0001) better improvement in Group A (soft tissue mobilization with cryotherapy) than Group B (stretching and strengthening). Soft tissue mobilization with cryotherapy is more significant in relieving pain and improving joint range of motion than stretching and strengthening in patients having cervicogenic headache.

KEYWORDS: Cervicogenic headache, stretching and strengthening, soft tissue mobilization.

I. INTRODUCTION

Headache disorders are broadly categorized into primary and secondary types. Primary headaches are idiopathic conditions characterized by pain. Whereas secondary headaches result from serious pathological conditions and carry a higher risk of morbidity and mortality. Accurate diagnosis relies on a detailed clinical history and physical examination to identify the indicative of secondary headaches. (1)

Cervicogenic headache (CH) is defined as a headache caused by a disorder of the cervical spine and its components including bony, disc, and soft tissue elements. It is usually, but not always accompanied by neck pain. The prevalence of CH is reported to range between 0.4% and 20% among the headache population and can be as high as 53% in patients experiencing headache following a whiplash injury. The

dominant features of CH typically include unilateral head pain. Pain elicited by external pressure over the ipsilateral upper neck . limited cervical range of motion, and the triggering of attacks by awkward or sustained neck movements. [2]

In the 1980s, Norwegian neurologist Sjaastad identified a unique kind of headache known as cervicogenic headache. This headache is rather frequent, but it is typically underdiagnosed, which leads to a less than ideal quality of life. It is believed that 46% of people worldwide suffer with headache problem. This figure rises to 52.0% in high- income nations. A headache occurs on 15 or more days per month for between 1.7 and 4 percent of adults worldwide. Although regional differences exist, headache impact individuals of various ages, ethnicities, socioeconomic backgrounds, and geographic location. The largest prevalence of headaches is in north America, where 85 to 90 percent of people say they have had a headache at some time. Between 2.5 to 4.1 percent of the overall population are impacted. This number, however, increases to 15-20% of those who experience headaches. Cervicogenic headaches are 10.4% common and prone among young people in India. They can be brought on by neck strain from using computers or smartphone, as well as from other activities like studying and playing video games.

II. METHODOLOGY

The study design is Quasi experimental study, which was conducted at Tagore medical college and hospital. The 30 samples were divided into 2 groups after fulfilling the inclusion and exclusion criteria. GROUP A- were treated with soft tissue mobilization with cryotherapy (n=15) and GROUP B- with stretching and strengthening exercise(n=15).

INCLUSION CRITERIA: Both male and female, Aged between 18- 25 years ,Chronic neck stiffness & Cervicogenic Headache.

EXCLUSION CRITERIA: Patients with malignancy in brain and spine, Patient below 18 & above 25 &Patient with recent surgeries, fracture in spine, Patients with dizziness, anxiety, Depression, Unwillingness to participate in the study.

PROCEDURE

The subjects of 30 will be divided into two group { group A and group B } by convenient method. Pre-test value for the recruited subjects will be assessed using the outcomes measures (NPRS & NPAD) prior to the start of study. Subjects in group A will undergoes soft tissue mobilization for upper trapezius, Levator scapulae, Deep flexors of neck muscles with cryotherapy. apply 3 days in a week for 4 weeks. Simultaneously subjects of group B will undergo stretching and strengthening for 3 sessions per week for 4 weeks. At the end of 4 weeks post test value will be assessed using the outcome measures (NPRS & NPAD).

III. DATA ANALYSIS

The mean and standard deviation of the values for NPRS in (Group-A & Group-B) and NPAD in (Group-A & Group-B) is to calculated. Independently T test was used for the comparison of the difference between Group-A and Group-B along with the difference in pre and post treatment.

IV. RESULT

The pre and post -test value of group A and B assessed using NPRS and NPAD 30 samples. In group A pre- test value 6.07 and is post- test value is 3.47 for group B pre- test value is 3.80 and post- test value is 3.07 for NPRS and group A pre -test value 35.5 is and post- test value is 22.33 group B pre -test value is

50.20 and post -test value is 29.20 for NPAD. The P value of group A & group B for NPRS is <0. 0001 and group A & group B for NPAD is <0.0417.
Results shown that Group A & Group B improved significantly whereas Group A shows more significant improver than Group B.

V. DISCUSSION

In this study, cervicogenic headache patients, (N=30) sample were taken and on simple random sampling technique divided into two group (n=15) in each of the Group A and Group B. Group A subjects received soft tissue mobilization with cryotherapy. In Group B, subjects received stretching and strengthening exercises. Which was practiced under the supervision, where pre-test and post-test NPRS and NPAD was taken.
The both interventions were effectively reduced pain and improved functionality. But one approach demonstrated greater effectiveness. Soft tissue mobilization with cryotherapy showed significant immediate pain relief. Likely due to its impact on reducing muscle tension, improving blood flow, and lowering inflammation. On the other stretching and strengthening exercises provided long- term benefits by addressing the root causes of cervicogenic headaches, such as poor posture, weak muscles, and joint dysfunction.
These findings align with existing literature, which support the use of manual therapy and cryotherapy for acute symptom management, while emphasizing the long- term rehabilitative role of stretching and strengthening exercises. The complementary mechanisms of both interventions suggest that a combination of these approaches might yield even better results.
The study's strengths include the use of validated tools like NPRS and NPAD for outcome measurement and its focus on a specific age group, However, limitations such as a relatively small sample size, short follow-up period, and potential confounding factors (e.g., individual differences in lifestyle or stress levels) should be acknowledged.
Future research could explore the long-term effectiveness of these interventions, evaluate their combined impact, or assess their applicability to other age groups and chronic conditions.
The both approaches effectively manage cervicogenic headaches, their distinct benefits highlight the importance of tailoring treatment strategies to individual needs. Integrating these methods in clinical practice can provide holistic and effective management for young adults with cervicogenic headaches

VI. CONCLUSION

This study proves that both groups (Group A treated with soft tissue mobilization with cryotherapy) and (Group B treated with stretching & strengthening) were shown improvers.
GROUP A shown more significant difference and hereby it is the concluded, that soft tissue mobilization with cryotherapy is more effective in treating cervicogenic headache patients.

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