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ORIGINAL ARTICLE

Cervical-Flexion Rotation Test and Cervical Mobility in Normal and Cervicogenic Headache Patients

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ABSTRACT

Background: The root of the word "cervicogenic headache" was in 1983. "Cervicogenic headache is a secondary headache caused by neck fractures, infections and hypertension. Cervicogenic headache pain occurs in the neck and back of the head and radiates to the front of the head.
Aims: To compare the results of the cervical flexion-rotation test (FRT) and cervical mobility between subjects with cervicogenic headache (CGH) and asymptomatic headache (CGH). Test of flexion-rotation conducted to determine cervicogenic headache.
Methods: This research was comparative and used to assess the distinctions between asymptomatic subjects and those with subjective cervicogenic headache characteristics. In this study 10 participants paired with 10 asymptomatic subjects with side dominant cervicogenic headache. A total of 20 participants were screened and distributed into treatment / case and control groups according to selection criteria. The severity of headaches was measured using a questionnaire. The goniometer was used to measure the cervical range of motion in both groups at pre- and post-treatment stages. Data was analyzed by SPSS.
Results: 50% participants are in age-group of 20-29, 20% participants are in age-group of 30-39, 15% participants are in age-group of 40-49 and 15% participants are in age-group of 50 or above.
Conclusion: It is concluded that in asymptomatic subjects, ROM was normal with no pain during cervical flexion rotation test.
Keywords: Flexion-rotation test (FRT), successful cervical stability, cervical range of motion (CROM), goniometer

INTRODUCTION

A cervicogenic concern is a soreness within the neck, too even though a unaccompanied feels the ache into his tip.(Eske, 2019) Cervicogenic Headache (CGH) is a continual concern that originates beyond the atlanto-occipital yet higher cervical joints or is felt in one or higher brain and/or surface areas.(Goodman & Fuller, 2014) When scientific requirements bear been used, the occurrence concerning cervicogenic concern has been estimated to lie 1%, 2.5%,17 and 4.1% (O Sjaastad, 2008) into the normal population or as like high as much 17.5% amongst sufferers together with severe complications.(Evers, 2008) The casualty about concern victims below whiplash is as much excessive as fifty three percent (Lord, Barnsley, Wallis, & Bogduk, 1994). It is assumed so cervicogenic concern is referred to so pain bobbing up beside pain brought on by cervical constructions innervated by means of C1 , C2, or C3 spinal nerves; thus, someone shape innervated via the spinal nerves concerning C1-C3 may additionally moreover be the supply concerning cervicogenic headache.(Al Khalili et al., 2019)

Cervicogenic headaches arise beside structural problems into the neck then are primarily triggered through issues including the vertebrae at the pinnacle concerning the spine, called the cervical vertebrae, or especially the C2-3 vertebra. Some scientific conditions that may motive cervicogenic headaches include: tumors, fractures, upper spine arthritis, whiplash and another neck injury (Eske, 2019)

Unilateral "ram's horn" and unilateral prevailing headaches. aggravated by means of stance then neck movement, tenderness of top three cervical joints.(Biondi, 2005).

The objectives of the study were to compare the results of the cervical flexion-rotation test (FRT) and cervical mobility between subjects with cervicogenic headache (CGH) and asymptomatic headache (CGH). Test of flexion-rotation conducted to determine cervicogenic headache (CGH).

MATERIAL AND METHODOLOGY

The type of study was comparative measurement study. After permission from Ethical Committee, the data was collected from different Government hospitals of Faisalabad. Total 20 subjects were screened for this study in government hospitals in which 10 were healthy subjects and 10 were cervicogenic headache subjects. Screening was done on the basis of inclusion criteria and as demand of the study that patient with cervicogenic headache must be diagnosed. These 20 subjects were then allocated into treatment/case and control groups. Headache severity will be assessed by questionnaire. Cervical range of motion in both groups will be assessed by goniometer. As the total 20 subjects were allocated into treatment/case and control groups, this allocation was done by the researcher with the use of probability convenient sampling.

Inclusion Criteria: Subjects screened in this study according to Unilateral and side dominant headache except side-shift, Associated trunk stiffness, Headache frequency over at least an common of certain through week, History over topical semi-continuous or continuous headache because of at least the preceding iii months, Neck symptoms preceded or were a co-existent feature among onset about headache.

Exclusion Criteria: Subjects excluded in this study according to Headache not regarding cervical origin-based over subjective screening standards promoted via the International Headache Society (2000), Autonomic, dizziness or visible disturbance symptoms, Known congenital stipulations on the cervical backbone (e.g. congenital fusion).

Population: As aims and objectives of this research were to compare the findings of the cervical flexion-rotation test (FRT) between subjects with cervicogenic headache (CGH) and asymptomatic and to assess the active range of cervical motion in asymptomatic and cervicogenic headache subjects for this reason target population selected was patients of cervicogenic headache.

Data Collection Tool: Headache Questionnaire, Goniometer, Visual Analogue Scale (VAS).

Data Collection Procedure: It was a comparative measurement study in which data was collected through convenient sampling technique from different Government Hospitals of Faisalabad. In this study 20 subjects were divided into 2 groups as symptomatic and asymptomatic group. A total of 20 participants will be screened out as per inclusion criteria and allocated into cervicogenic and control groups. During the allocation procedure subject is blind. Headache severity will be assessed by questionnaire. Cervical range of motion in both groups will be assessed by goniometer.

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Visual Analogue Scale (VAS) and Goniometer will be data collection tools to measure pain and Range of motion (ROM). For the flexion-rotation test they were advised to lie supine on a physiotherapy treatment couch. All the subjects were instructed to relax while their neck was move to end range cervical flexion. In this flexed position the head and neck was passively rotated as far as possible within comfortable limits. The range will be recorded and repeated three times in each direction. To measure active cervical motion the subject was sit with a neutral spine posture, with the spine supported against a high back chair. They were instructed to move their head and neck through all cardinal planes as far as possible within comfortable limits.

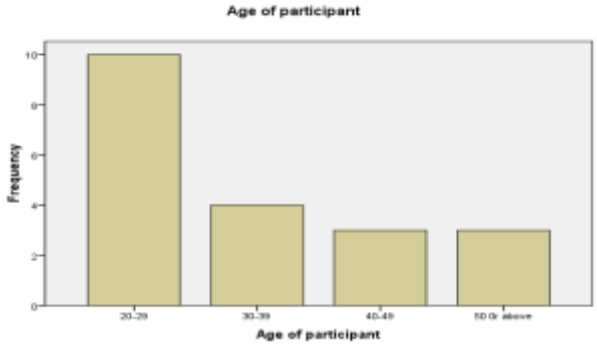
RESUTS

Frequency distribution of age: Results shows that 50% participants are in age-group of 20-29, 20% participants are in age-group of 30-39, 15% participants are in age-group of 40-49 and 15% participants are in age-group of 50 or above.

Table1: Frequency and percentage of age distribution

Age	Frequency	Percentage
20-29	10	50.0
30-39	4	20.0
40-49	3	15.0
50 or above	3	15.0

Graph1: Frequency and percentage of age distribution



Frequency distribution of gender: Results show that out of 20 subjects 60% are female and 40% are male.

Graph 2: Frequency distribution and percentage according to Gender.

Table 2: Frequency distribution and percentage according to gender

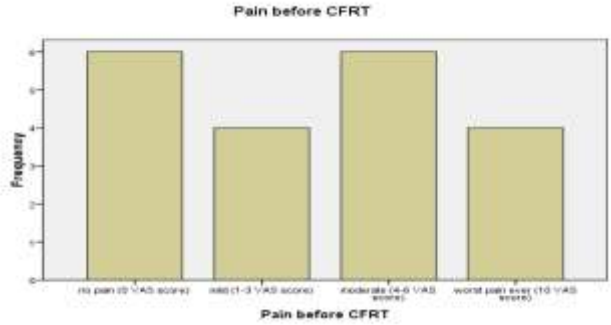
Gender	Frequency	Percentage
Male	8	40.0
Female	12	60.0

Frequency distribution of pain before CFRT: Results show that 30% subjects have no pain, 20% subjects have mild pain, 30% subjects have moderate pain and 20% subjects have worst pain.

Table 3: Frequency distribution and %age according to pain before CFRT

Pain before CFRT	Frequency	Percent
no pain (0 VAS score)	6	30.0
Mild (1-3 VAS score)	4	20.0
Moderate (4-6 VAS score)	6	30.0
Worst pain (10 VAS score)	4	20.0

Graph 3: Frequency and percentage of pain distribution



DISCUSSION

The analysis and results of this study concluded that cervical-flexion rotation test assess dysfunction at the C1-C2 motion segment in contrast to other examination protocols. This study includes the variable such as: age, gender, pain before CFRT, pain after CFRT, neck flexion before CFRT, neck flexion after CFRT, neck extension before CFRT, neck extension after CFRT, neck lateral flexion before CFRT, neck lateral flexion after CFRT, neck rotation before CFRT, neck rotation after CFRT. Classification of participants on the basis of pain before CFRT. It indicates that out of 30% subjects have no pain, 20% subjects have mild pain, 30% subjects have moderate pain and 20% subjects have worst pain.

CONCLUSION

This study concluded that in asymptomatic subjects, ROM was almost normal with no pain during cervical flexion rotation test. Ranges of neck movements such as flexion, extension, lateral flexion and rotation were accurate. While in symptomatic patients have moderate and severe pain after CFRT. Due to altered posture, movement pattern was aligned. Range of motion after CFRT was improved. Independent T test and frequency distribution is used in this tabulation to compare the effects of cervical flexion rotation test in symptomatic and asymptomatic patients we compared the means with independent T test in this study we concluded the effect of cervical flexion rotation between subjects with cervicogenic headache and asymptomatic.

Conflict of interest: Nil

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