

Effectiveness of Active Release Technique Versus Corrective Exercises in the Management of Upper Cross Syndrome

Received: 25 October 2022, **Revised:** 20 November 2022, **Accepted:** 30 December 2022

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Keywords:

Upper Cross Syndrome, Active Release Technique, Exercises

Abstract

Background: Upper crossed syndrome is caused by tight upper trapezius and levator scapulae, tight lower and middle trapezius, tight suboccipital muscles and sternocleidomastoid, tight serratus anterior, and tight pectoralis major and minor. Upper cross syndrome causes the elevator scapulae, upper trapezius, and pectoralis minor muscles to stiffen and shorten from their original length, occasionally involving the pectoralis major muscle. Upper crossed syndrome is characterized by a forward head posture (FHP), a hunched thoracic spine (rounded upper back), elevated and protruding shoulders, and a rounded upper back. Scapular winging and reduced thoracic spine mobility. Manual material handling activities, such as workers who perform their duties in an inconvenient position and repeat the same action throughout the workday, can sometimes result in musculoskeletal disorders. **Methodology:** The study was a comparative study conducted among both male and female participants held at the Krishna college of physiotherapy, where the subjects were assessed and data collection was done. All the participants were selected by random sampling method. Each of them was assessed by forward neck posture, rounded, protracted, or elevated shoulders. The individuals diagnosed with upper cross syndrome the age group between 18 - 40 years are only eligible for the study. **Results:** Data from fifty Upper cross syndrome patients were obtained and analyzed. Descriptive and inferential statistics, as well as student's paired and unpaired t tests, were used in the statistical study. The study's programme of choice was SPSS 27.0, and the relevance cut off was set at $p < 0.05$. **Conclusion:** : With what we know about ART so far, we may infer that it will be helpful in alleviating UCS symptoms.

1. Introduction

Upper crossed syndrome is caused by a combination of factors, including a lack of strength in the lower and middle trapezius, tightness in the upper trapezius and levator scapula, a lack of flexibility in the deep neck flexors, a contraction in the suboccipital muscles and sternocleidomastoid, a weakness in the serratus anterior, and a contraction in the pectoralis major and minor [1]. Upper cross syndrome causes stiffness and shortening of the elevator scapulae muscle, the top fibres of the trapezius muscle, the pectoralis minor muscle, and, in rare cases, the pectoralis major muscle. While lower fibers of trapezius muscle and rhomboids with other deep cervical flexor muscle get involved [2].

Upper crossing syndrome is characterised by a forward head posture (FHP), rounded upper back, lifted and protracted shoulders, and hunched thoracic spine. and a rounded upper back. Scapular winging, as well as decreased thoracic spine mobility. Manual material handling activities, For instance, employees who do their duties in an awkward posture and then perform the same motion again throughout the workday. can sometimes cause musculoskeletal disorders.^[1]

Upper crossed syndrome describes a person who has forward head posture and a rounded shoulder. When a person has a musculoskeletal injury, it is not uncommon for it to manifest in the form of pain in the neck and/or the arms and hands.

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Upper crossed syndrome describes a person who has forward head posture and a rounded shoulder. Repetitive motion, static posture, and carrying heavy loads all increase the risk of musculoskeletal injuries, particularly in the neck and upper extremities, and may make some professions unsafe for work. Prolonged usage of an awkward or unnatural posture might lead to FHP. Continual sitting or standing for lengthy periods of time at work has been linked to postural faults and deviation, and research suggests that poor posture may be a symptom of other underlying health problems in some occupations. [1]

The scar tissue that may cause discomfort, stiffness, muscular weakness, and aberrant sensations like mechanical pain can be removed by the active release technique (ART), a manual treatment for restoring soft tissue function.

Active release technique (ART) is a manual therapy for restoring soft tissue function that may eliminate scar tissue and its associated symptoms of discomfort, stiffness, muscle weakness, and abnormal sensations like mechanical pain. Problems with muscles, fascia, and tendons. Carpal tunnel disease, Achilles tendinitis, and tennis elbow all involve soft tissue around a joint in the distal limbs, and ART has been proven to be beneficial in treating all three [1]. ART is also helpful in decreasing discomfort and enhancing range of motion (ROM) for individuals who have suffered a partial tear of the supraspinatus tendon. Most people who suffer from persistent neck discomfort do so because of soft tissue deterioration in the region, which causes both pain and mobility constraints. Patients with partial tendon tears also benefit from ART, since it helps reduce discomfort and improve range of motion. Most people who suffer from persistent neck discomfort have trouble moving their heads and necks because of soft tissue dysfunction. Pain is lessened, and mobility is increased, thanks to ART. Active Release Technique (ART) and prescribed exercises were compared to conventional physical treatment with exercises, and ART was shown to improve anterior head carriage more quickly.

There is a lack of research on upper cross syndrome at the present time. The purpose of this research is to evaluate the effectiveness of Active

Release Technique (ART) and corrective exercises in treating patients with upper cross syndrome, with a focus on how these interventions may change patients' levels of cervical flexibility and how much their symptoms improve. Active Release Technique is used to help people become more flexible.

2. Materials and Methodology

Krishna Institute of Medical Sciences, Deemed to Be University, Karad's institutional ethics committee gave its approval to go forward with the project, and thus data collecting could begin. Male and female subjects were included in a research that was conducted at the Krishna College of Physiotherapy, where the subjects were assessed and data collection was done. All the participants were selected by random sampling method. Each of them was assessed by forward neck posture, rounded, protracted, or elevated shoulders. The individuals diagnosed with upper cross syndrome the age group between 18 -40 years are only eligible for the study.

Patients will be given enough information about the research before giving their permission, which will be obtained in a legal and ethical manner. Patients who agree to take part in the study will be separated from the general population in order to protect their anonymity, and then given pain and disability assessments using the Numerical pain rating scale (NRS) and the Neck Disability Index (NDI), respectively, before being randomly assigned to either Group A or Group B using the envelop method. The assessor will be blinded from the allocation in the group. The sample size of 50 subjects 25 each group was calculated from epitools. Participants had to be between the ages of 18 and 40, have a cranio-vertebral angle of less than or equal to 50 degrees, and have an NPRS score of 4 or above to be considered for inclusion. Those who had had cervical spine surgery or had suffered cervical spine damage or inflammatory arthritis (such as rheumatoid arthritis or ankylosing spondylitis) were not allowed to participate in the research

Those in Group A will be treated with active release, static stretching, and a hydrocollator pack. A hydrocollator pack with six to eight layers of towel over it will be used on patients in Group B in

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addition to upper trapezius stretching, levator scapulae and pectoralis major strengthening, rhomboid musculature strengthening, deep neck flexors, lower trapezius, and other corrective activities.

The Active Release Technique (ART) will cover the pectorals, levator scapulae, and upper trapezius on both sides. The physiotherapist treating the patients must check the affected muscles at each appointment. A single application of the active release technique, lasting between eight and ten minutes, will be performed on the afflicted muscles during each treatment session. Hence, the physiotherapist would simply treat the damaged muscles.

Static stretching: participants will be asked to sit with one hand on the edge of the seat in an effort to alleviate feelings of despair. Chill out and turn your head by maintaining one hand behind your head and sliding down to the other side. They'll need to hold each stretch for 15-20 seconds on each side, and do it twice or thrice. Stretching should be done two to three times per session.

3. Results

Table.1 Outcome Measure based analysis

OutcomeMeasure	GroupA		GroupB	
	Pre-treatment mean	Post treatment mean	Pre-treatment mean	Post-treatment mean
SPADI	8.83	7.88	8.88	7.88
NDI	20.11	19.41	15	14.70
NPR	3.94	2.38	4.11	2.58

Interpretation:

The statistical analysis made use of both descriptive and inferential statistics, as well as

Exercises: Exercises for Upper Cross Syndrome (UCS).

Cervical Nod: The patient lies on the floor or stands against a wall and makes a feigned motion with their neck, as if they are reaching for something behind them. You'll feel your head and chin lift, but you won't be aware of it. That might make you appear to have a double chin. It might be helpful to have something to press into if you place a towel coiled up behind the neck. By simultaneously stretching the muscles at the back of the head and strengthening those at the front of the neck, this motion creates a healthy equilibrium between the two extremes in the cervical spine (back). It's recommended to do 10-15 sets. While doing rowing exercises with a resistance band, the PT should attach the band to something at around hip height (typically, a doorknob is good and desired). The patient is then instructed to draw the resistance band towards patient using both upper limbs (UL) while standing in front of the doorknob or anchor point, maintaining a tall posture and keeping the elbows in (not splaying open).

paired and unpaired t tests run by the students themselves. The research used SPSS 27.0, with a p-

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value threshold of 0.05 to determine statistical significance. Fifty patients completed the therapy programme and were then randomly assigned to either Group A or B. We gathered information and analysed the numbers. It seems that both treatment procedures helped individuals with UCS, although ART was more effective at relieving pain.

4. Discussion

Patients with upper cross syndrome were split into two groups in this research to assess the efficacy of two different treatment methods for this illness. While both groups had improvements in their neck range of motion and NRS ratings, those who received ART also saw greater reductions in pectoralis major muscle tension. The same NDI, NRS, and SPADI were used to evaluate the outcomes. Compared to Corrective exercises, ART was shown to have a better effect in this research. This will be the first research to our knowledge to assess the efficacy of Active Release Technique for upper crossed syndrome and to compare the efficacy of ART to that of remedial activities for this condition. Studies have shown that exercise is effective in the treatment of upper cross syndrome, but to our knowledge, this is the first research to evaluate the efficacy of active release method and traditional physiotherapy in patients with UCS. In addition, this research will use generally accepted, reliable, and accurate measures of pain, neck dysfunction, cervical ROM, and muscle length. The active release approach may not be as successful as exercise therapy in reducing neck disability and increasing cervical ROM in individuals with UCS, according to the study's limitations. That's why we're doing this research: to see how active release method stacks up against corrective exercises as a therapy option for people with UCS.

5. Conclusion

In conclusion, the study found that, when compared to corrective exercises followed by the same treatment protocol and timing, the administration of ART among UCS patients had good trends and benefited patients.

Acknowledgement: The writers appreciate the contribution of the study's subject. Dr. Smita Patil, whose help was invaluable throughout the

investigation, also deserves recognition. The authors would like to express their gratitude to the ethics committee of KIMSDU, Karad, for their support and financing of the study, as well as the Biostatistics department for their statistical assistance with the sample size and the values of the results.

Reference

- [1] Junaid chandsaheb mujawar, javid hussain sagar prevalence of upper cross syndrome in laundry workers
- [2] fizza ali syed , idrees ahmed zahoor , saira shabbir , arif ali rana , mubshra ibrahim , erum ghaffir Effects of active release technique and active isolated stretching on muscles of upper cross syndrome
- [3] Jun ho kim, pt1), han suk lee, phd, pt1)*, sun wook park, ms, pt1 Effects of the active release technique on pain and range of motion of patients with chronic neck pain
- [4] Prasad risalda1 , pratik phansopkar2 , waqar m. Naqvi Effectiveness of active release technique verses conventional physiotherapy in management of upper cross syndrome
- [5] Prasad risaldar, prathik phansopkar, chaithanya a kulkarni, sakshi p arora Effectiveness of active release technique verses conventional physiotherapy in management of upper cross syndrome.
- [6] Risaldar P, Phansopkar P, Naqvi WM, 2021. "Effectiveness of Active Release Technique verses Conventional Physiotherapy in Management of Upper Cross Syndrome". *Indian Journal of Forensic Medicine & Toxicology*. 15(1), 246–50.
- [7] Dhage DP, Anap DD, 2019. "Prevalence of an Upper Crossed Syndrome in Physiotherapy College Students– A Cross-Sectional Study". *VIMSHSJ*. 6(1),10–3.
- [8] Mubeen, I., Malik , S., Akhtar, W., Iqbal, M., Asif, M., Arshad, A., Zia, S., & Khalid, S., 2016. "Prevalence Of Upper Cross Syndrome Among The Medical Students Of University Of Lahore". *International Journal Of Physiotherapy*. 3(3), 381-384.
- [9] MacDermid JC, Walton DM, Avery S, Blanchard A, Etruw E, McAlpine C, et al., 2009. "Measurement Properties of the Neck Disability Index: A Systematic Review". *J Orthop Sports Phys Ther*. 39(5), 400–17.

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- [10] Ali S, Ahmad S, Jalal Y, Shah B. Effectiveness of Stretching Exercises Versus Muscle Energy Techniques in the Management of Upper Cross Syndrome. *Rawal medical journal*. 2017, 45(1), 127-131.
- [11] Phadke A, Bedekar N, Shyam A, Sancheti P. Effect of muscle energy technique and static stretching on pain and functional disability in patients with mechanical neck pain: A randomized controlled trial. *Hong Kong Physiotherapy Journal*. 2016, 35(1), 5-11.
- [12] Gillani S, ain Q, Rehman S, Masood T. Effects of eccentric muscle energy technique versus static stretching exercises in the management of cervical dysfunction in upper cross syndrome: a randomized control trial. *Journal of Pakistan Medical Association*. 2017, 70(3) 394-398