

## Comparative Study Between Continuous and Intermittent Cervical Traction in Treatment of Chronic Mechanical Neck Pain

MAGDA MAHER ABD ELSHAFY, M.Sc.\*; IBRAHIM M. ELNAGGAR, PhD.\*;  
MOHAMMED A. KADDAH, M.D.\*\* and EBTESSAM F. GOMAA, PhD.\*

*The Department of Orthopedic Physical Therapy\*, Faculty of Physical Therapy, Cairo University and  
Department of Orthopedic Surgery\*\*, Faculty of Medicine, Cairo University*

### Abstract

**Background:** Mechanical neck pain may be defined as simple neck pain without specific underlying disease causing the pain, symptoms vary with physical activity and over time. Cervical traction is popular for treating and preventing musculoskeletal spinal disorders by widening of intervertebral foramen, distraction of facet joints, straightening of spinal musculature, tensing of ligaments, separation of vertebral bodies. Mechanical cervical traction can be applied in a continuous or an intermittent mode.

**Aim of Study:** The aim of this study was to compare between the effect of continuous and intermittent cervical traction on neck pain severity, neck functional disability and neck sagittal, coronal and transverse mobility in patients with chronic mechanical neck pain.

**Patients and Methods:** Thirty male and female patients diagnosed as chronic mechanical neck pain whose age ranged between 20 to 40 years with duration of illness between 3 and 12 months participated in this study. They were randomly distributed into two equal experimental groups. The first group received continuous cervical traction, while the second group received intermittent cervical traction. All patients were treated for 12 sessions (3 sessions/week) every other day for four weeks.

**Results:** Both groups had significant improvement in all the measured variables. Intermittent cervical traction was significantly more effective than continuous cervical traction in reduction of neck pain severity and increasing neck coronal mobility. However, there was no significant difference between groups on functional disability, neck sagittal and transverse mobility.

**Key Words:** Mechanical neck pain — Continuous traction — Intermittent traction — Neck pain severity — Functional disability — Neck mobility.

**Correspondence to:** Dr. Magda Maher Abd Elshafy,  
The Department of Orthopedic Physical Therapy,  
Faculty of Physical Therapy, Cairo University

### Introduction

**NECK** pain is a pain located in the anatomical region of the neck, with or without radiation to the head, trunk and upper limbs, it includes the posterior neck region, from the superior nuchal line to the spine of the scapula and the side region down to the superior border of the clavicle and the suprasternal notch [1].

Symptoms of chronic mechanical neck pain appear to be worsened during prolonged static muscle activity and repetitive job tasks with duration of symptoms longer than three months [2,3]. Mechanical neck pain has a postural or mechanical basis and affects about two thirds of people especially in the middle age, women being affected more than men [4].

Several physical therapy interventions have been recommended for patients with neck pain. These interventions include manipulation, stretching, strengthening and endurance exercise, transcutaneous electrical nerve stimulation, soft collar, heat or cold [4]. One of the most common conservative treatments used in chronic mechanical neck pain is cervical traction [5].

Cervical traction frequently used as a component in outpatient neck pain treatment programs, involves applying a traction force to the neck area by using a mechanical system unit. The physiological effects of mechanical traction include stretching of the muscles leads to relaxation, improving local circulation and diminishing pain [6]. Mechanical cervical traction can be applied in a continuous or an intermittent mode [7]. It was found that using continuous or intermittent cervical traction in treatment of patients with chronic mechanical neck pain had significant effect on neck pain, functional disability and cervical range of motion.

To the authors' knowledge there are no previous comparative studies compared between the pure effect of continuous and intermittent cervical traction in treatment of chronic mechanical neck pain. Therefore, the purpose of this current study is to compare between the effect of these two modes of traction in treatment of patients with chronic mechanical neck pain.

### Patients and Methods

This study was conducted in the outpatient clinic of the Health Insurance of El Mansoura General Hospital, El Dakahlia Governorate, Egypt from September 2021 to March 2022. Thirty male and female patients participated in this study.

The inclusion criteria for this study included patients who were diagnosed as chronic mechanical neck pain. Then age ranged between 20 to 40 years with a duration of illness ranged between 3 and 12 months from the onset of illness. The exclusion criteria included any other pathological conditions that might cause neck pain rather than mechanical type.

All patients were referred by orthopedic surgeons who diagnosed the cases based on the clinical and radiological examinations. Patients were randomly distributed into two equal treatment groups. All patients were treated for 12 sessions (3 sessions/week) every other day for four weeks.

The first group consisted of 15 patients (3 males and 12 females), their mean age was 32.00 ( $\pm 5.73$ ) years, mean weight was 75.00 ( $\pm 16.23$ ) kilograms and mean duration of illness was 7.67 ( $\pm 2.41$ ) months. The second group consisted of 15 patients (5 males and 10 females), their mean age was 28.60 ( $\pm 7.33$ ) years, mean weight was 79.80 ( $\pm 15.60$ ) kilograms and mean duration of illness was 8.20 ( $\pm 2.40$ ) months.

#### Assessment procedures:

Each patient was assessed pretreatment within 24 to 48 hours before the first session and posttreatment within 24 to 48 hours after the last session by measuring neck pain severity, functional disability and neck mobility in the sagittal, coronal and transverse planes.

#### A- Neck pain severity:

Neck pain severity was assessed by using the numerical pain rating scale based on the work of Williamson & Hoggart [8]. It is 10cm line which is divided from 0 to 10 with 1cm interval and explanation was made to the patient to choose a number on this line which best describes his neck pain severity, 0 means no pain at all and 10 means the worst pain imaginable. In this study the Arabic version of the numerical pain rating scale was used [9].

#### B- Neck functional disability:

Neck functional disability was assessed by the neck disability index based on the work of Vernon [10]. It consists of 10 sections: Pain intensity, personal care, lifting, reading, headaches, concentration, work, driving, sleeping and recreation. Each section consists of 6 possible statements and each statement is scored from 0 (no disability) to 5 (total disability). The patient was asked to answer each section by marking one statement that most applies to him. The maximum possible score is 50. The neck disability index score was normalized to 100 to be reported as percentage. The Arabic version of the neck disability index was used in this study [11].

#### C- Neck mobility:

Neck mobility in the sagittal, coronal and transverse planes was measured by the Myrin (**OB**) goniometer (the version used was OB Goniometer Myrin, Lic-Rehab, 5-17182, Solna, Sweden) based on the work of Malmstrom et al. [12]. The instrument consists of a fluid filled rotatable container mounted on a plate. The container has a compass needle that reacts to the earth's magnetic field and an inclination needle that is influenced by the force of gravity. The compass needle measures movements in the horizontal plane, the inclination needle measures movements in the sagittal and coronal planes [12].

#### Treatment procedures:

Patients in the first group received infrared radiation as a source of warming up for 15 minutes. The infrared equipment used in this study was model (SN -1033), made in Egypt. This was followed by continuous cervical traction based on the work of Elnaggar et al. [13]. The traction unit used was (ITO motorized traction unit made in Japan). Patient was instructed about the procedure and he was placed in the supine lying position on the traction table with head on a hard pillow, the neck was at 15° flexion. The traction force was adjusted to 10% of the patient's body weight, the total traction time was 20 minutes. The head halter was fitted on the patient occiput and chin and was adjusted to be fitted with the traction probe, then the safety button probe was given to the patient and was instructed to press it if any discomfort would be felt.

Patients in the second group received infrared radiation as a source of warming up for 15 minutes followed by intermittent cervical traction. Each patient was treated according to the same protocol used for the first group except that the traction force was adjusted to 10% of the patient's body weight as loading force for 40 seconds and the unloading traction force was 5% of the body weight for 10 seconds, the total traction time was 20 minutes based on the work of Bid et al. [6].

**Results**

Pretreatment comparison between groups for the demographic data (age, weight and duration of illness) showed non significant difference ( $p > 0.05$ ). Pretreatment comparison between groups for the dependent variables of the study was also done. This comparison showed non significant difference between groups for neck sagittal and coronal mobility as well as functional disability ( $p > 0.05$ ). However, a significant difference between groups pretreatment was found for neck pain severity and neck transverse mobility ( $p < 0.05$ ).

**Within and Between Groups Difference Post-treatment:**

1- Neck pain severity:

**A- Within groups difference:**

Comparison between the mean values of neck pain severity measured pretreatment and posttreatment within groups was done by using the paired t-test. In both groups there was significant difference between the pretreatment and the posttreatment mean values of neck pain severity. This means that both groups had significant reduction of neck pain severity after treatment (Table 1).

Table (1): Within groups difference of neck pain severity post-treatment.

Neck pain severity	Pre-treatment	Post-treatment	t-value	p-value
	Mean ( $\pm$ SD)	Mean ( $\pm$ SD)		
Continuous cervical traction	5.87 ( $\pm$ 1.64)	4.73 ( $\pm$ 1.91)	2.43	0.02*
Intermittent cervical traction	8.00 ( $\pm$ 1.00)	3.40 ( $\pm$ 1.76)	9.66	0.001*

\*Significant difference.

**B- Between groups difference:**

The unpaired t-test was used to examine the difference between the posttreatment means of neck pain severity of both groups by using the mean difference to overcome the significant difference between groups before treatment.

A significant difference was found between the mean difference of neck pain severity of the continuous cervical traction group 1.84 ( $\pm$ 1.81) and the mean difference of the intermittent cervical traction group 4.60 ( $\pm$ 1.84) with t-value equals 5.20 and p-value equals 0.001. This mean that intermittent cervical traction is more effective than continuous cervical traction in reduction of neck pain severity.

2- Neck functional disability:

**A- Within groups difference:**

Comparison between the median values of neck functional disability measured pretreatment and

posttreatment within groups was done by using the Wilcoxon signed rank test. In both groups there was significant difference between the pretreatment and the posttreatment median values of neck functional disability. This means that both groups had significant reduction of neck functional disability after treatment (Table 2).

Table (2): Within groups difference of neck functional disability post-treatment.

Neck functional disability	Pre-treatment	Post-treatment	z-value	P-value
Continuous cervical traction	48.88 (4222-56.00)	36.00 (33.33-51.11)	3.01	0.003*
Intermittent cervical traction	60.00 (44.00-68.00)	33.33 (24.44-42.22)	3.41	0.001*

\*Significant difference.

Data expressed as median (25th percentile- 75th percentile).

**B- Between groups difference:**

The Mann Whitney test was used to examine the difference between the posttreatment medians of neck functional disability of both groups.

Non significant difference was found between the median of neck functional disability of the continuous cervical traction group (36.00) and the median of the intermittent cervical traction group (33.33) with z-value equals (1.50) and p-value equals (0.13). This mean that both treatments are equally effective in reduction of neck functional disability.

3- Neck sagittal mobility:

**A- Within groups difference:**

Comparison between the mean values of neck sagittal mobility measured pretreatment and post-treatment within groups was done by using the paired t-test. In both groups there was significant difference between the pretreatment and the post-treatment mean values of neck sagittal mobility. This means that both groups had significant increase in neck sagittal mobility after treatment (Table 3).

Table (3): Within groups difference of neck sagittal Mobility post-treatment.

Neck sagittal mobility	Pre-treatment	Post-treatment	t-value	p-value
	Mean ( $\pm$ SD)	Mean ( $\pm$ SD)		
Continuous cervical traction	108.75 ( $\pm$ 24.67)	128.27 ( $\pm$ 15.84)	5.12	0.001*
Intermittent cervical traction	117.67 ( $\pm$ 16.49)	136.40 ( $\pm$ 6.64)	5.76	0.001*

\*Significant difference.

**B- Between groups difference:**

The unpaired t-test was used to examine the difference between the posttreatment means of neck sagittal mobility of both groups.

Non significant difference was found between the posttreatment mean of neck sagittal mobility of the continuous cervical traction group 128.27 ( $\pm 15.84$ ) and the posttreatment mean of the intermittent cervical traction group 136.40 ( $\pm 6.64$ ) with t-value equals (1.83) and p-value equals (0.08). This mean that both treatments are equally effective in increasing of neck sagittal mobility.

## 4- Neck coronal mobility:

**A- Within groups difference:**

Comparison between the mean values of neck coronal mobility measured pretreatment and post-treatment within groups was done by using the paired t-test. In both groups there was significant difference between the pretreatment and the post-treatment mean values of neck coronal mobility. This means that both groups had significant increase in neck coronal mobility after treatment (Table 4).

Table (4): Within groups difference of neck coronal Mobility post-treatment.

Neck coronal mobility	Pre-treatment	Post-treatment	t-value	p-value
	Mean ( $\pm$ SD)	Mean ( $\pm$ SD)		
Continuous cervical traction	71.07 ( $\pm 11.28$ )	79.73 ( $\pm 10.11$ )	6.08	0.001*
Intermittent cervical traction	70.93 ( $\pm 8.51$ )	86.47 ( $\pm 4.98$ )	6.11	0.001*

\*Significant difference.

**B- Between groups difference:**

The unpaired t-test was used to examine the difference between the posttreatment means of neck coronal mobility of both groups.

A significant difference was found between the posttreatment mean of neck coronal mobility of the continuous cervical traction group 79.73 ( $\pm 10.11$ ) and the posttreatment mean of the intermittent cervical traction group 86.47 ( $\pm 4.98$ ) with t-value equals (2.31) and p-value equals (0.02). This mean that intermittent cervical traction is more effective than continuous cervical traction in increasing neck coronal mobility.

## 5- Neck transverse mobility:

**A- Within groups difference:**

Comparison between the mean values of neck transverse mobility measured pretreatment and posttreatment within groups was done by using the paired t-test. In both groups there was significant

difference between the pretreatment and the posttreatment mean values of neck transverse mobility. This means that both groups had significant increase in neck transverse mobility after treatment (Table 5).

Table (5): Within groups difference of neck transverse Mobility post-treatment.

Neck transverse mobility	Pre-treatment	Post-treatment	t-value	p-value
	Mean ( $\pm$ SD)	Mean ( $\pm$ SD)		
Continuous cervical traction	127.07 ( $\pm 19.36$ )	147.73 ( $\pm 19.24$ )	4.14	0.001*
Intermittent cervical traction	143.67 ( $\pm 18.02$ )	168.13 ( $\pm 11.12$ )	6.46	0.001*

\*Significant difference.

**B- Between groups difference:**

The unpaired t-test was used to examine the difference between the posttreatment means of neck transverse mobility of both groups by using the mean difference to overcome the significant difference between groups before treatment.

Non significant difference was found between the mean difference of neck transverse mobility of the continuous cervical traction group 20.67 ( $\pm 19.33$ ) and the mean difference of the intermittent cervical traction group 24.47 ( $\pm 14.67$ ) with t-value equals 0.61 and p-value equals 0.55. This mean that both treatments are equally effective in increasing of neck transverse mobility.

## Discussion

Our results showed that intermittent cervical traction was more effective than continuous cervical traction in reducing neck pain severity and increasing neck coronal mobility. However, both treatments were equally effective in reducing functional disability and increasing neck sagittal and transverse mobility.

In our current study, there was a significant reduction in neck pain severity with chronic mechanical neck pain in patients treated by continuous cervical traction. This result is in agreement with Ojoawo et al. [14], Bibi & Arif [15] and Lee et al. [16]. There was also a significant reduction of neck pain severity in patients treated by intermittent cervical traction. This finding is in agreement with El Semary et al. [17], Goyal [18] and Atteya et al. [19].

Reduction of neck pain through continuous cervical traction according to Dhinwa & Mohd [20] is due to stimulation of large afferent A-beta fibers (mechanoreceptors) of the muscles and spinal joints. According to Himanshi & Nirali [21] the

mechanism by which intermittent traction reduces neck pain is by relieving inflammatory reaction of nerve roots by improving circulation or by preventing and reducing adhesions and contractures of the cervical structures and by decompressing the spine structures by stretching paraspinal muscles and ligaments.

In our current study, there was a significant reduction of neck functional disability in patients treated by continuous cervical traction. This result is in agreement with the findings of Ojoawo et al. [14], Lee et al. [16] and Dawood et al. [22]. There was also a significant reduction of neck functional disability in patients treated by intermittent cervical traction. This finding is in agreement with Goyal [18], Atteya et al. [19] and Yun et al. [23].

Bello et al. [24] referred the improvement in the score of neck functional disability due to the reduction of neck pain intensity after treatment by continuous cervical traction by stimulating the large afferent A-beta pain fibers, which reduces pain intensity presynaptically at the spinal level which in turn increases neck flexibility. Chiu et al. [5] stated that intermittent cervical traction decreases neck functional disability by increasing neck flexibility, decreasing muscle spasm and increasing blood circulation to the affected areas.

In our current study, there was a significant increase of sagittal, coronal and transverse neck mobility in patients treated by continuous cervical traction. This result is in agreement with the findings of Bibi & Arif [15], Lee et al. [16] and Shakoor et al. [25]. There was also a significant increase of sagittal, coronal and transverse neck mobility in patients treated with intermittent cervical traction. This finding is in agreement with Goyal [18], Atteya et al. [19] and Shakoor et al. [25].

According to Akbari & Bayat [26] neck mobility in patients with mechanical neck pain treated with cervical traction increases in all directions due to the correction of the spinal alignment, the reduction of the protective spasm, distraction of the facet joints, increasing the sliding between facets and stretching shortened paraspinal soft tissues, ligaments, and joint capsule.

Another physiological explanation concerned with increase range of motion after traction was described by El Semaary et al. [17] who stated that group II afferent muscle spindles in autogenic inhibition is placed in a lengthened position leading to relaxation of the muscles.

According to Lamba et al. [27], Savva and Gikas [28] and Deepak [29] increase in neck mobility in patients with neck disorders treated with cervical traction is due to stretching of the muscles and connective tissues, opening the intervertebral foramen and causing vertebral separation.

### Conclusion:

The use of continuous cervical traction or intermittent cervical traction is effective method for treatment of patients with chronic mechanical neck pain between 20-40 years. Any of these two modes of cervical traction can be used to reduce neck pain severity and functional disability as well as increase neck sagittal, coronal and transverse mobility. However, intermittent cervical traction is more effective in reduction of neck pain severity and increasing neck coronal mobility.

### References

- 1- GUZMAN J., CARROLL L., HALDEMAN S. and CARRAGEE E.: A new conceptual model of neck pain linking onset, course, and care: The bone and joint decade 2000-2010 task force on neck pain and its associated disorders. *European Spine Journal*, 33: 199-213,2008.
- 2- LYTRAS D., MYROGIANNIS I. and SYKARAS E.: The efficacy of manual therapy and therapeutic exercise in patients with chronic neck pain: A narrative review. *International Journal of Physical Education, Sports and Health*, 5: 32-36,2018.
- 3- TREEDE R., RIEF W., BARKE A., AZIZ Q , BENNET M., BENOLIEL R., COHEN M. and EVERS S.: Chronic pain as a symptom or a disease: The IASP classification of chronic pain for the international classification of diseases. *Pain*, 160: 19-27,2019.
- 4- BINDER A.: The diagnosis and treatment of nonspecific neck pain and whiplash. *British Medical Journal*, 8: 1-3, 2007.
- 5- CHIU T., NG J., WALTER-ZHANG B., LIN R.J.H., ORTELLI L and KUAN S.: A randomized controlled trial on the efficacy of intermittent cervical traction for patients with chronic neck pain. *Clinical Rehabilitation*, 1: 1-9, 2011.
- 6- BID D., RAMALINGAM T., BHATT J., RATHOD P., TANDEL K. and TANDEL S.: The effectiveness of mechanical cervical traction on patients with unilateral mechanical neck pain. *Indian Journal of Physiotherapy & Occupational Therapy*, 8: 97-103,2014.
- 7- BORMAN P., KESKIN D., EKICI B. and BODUR H.: The efficacy of intermittent cervical traction in patients with chronic neck pain. *Clinical Rheumatology*, 27: 1249-1253, 2008.
- 8- WILLIAMSON A. and HOGGART B.: Pain: A review of three commonly used pain rating scales. *Journal of Clinical Nursing*, 14: 798-804,2005.
- 9- ALGHADIR A., ANWER S. and IQBAL Z.: The psychometric properties of an Arabic numerical pain rating scale for measuring osteoarthritis knee pain. *Disability and Rehabilitation*, 38: 2392-2397,2016.
- 10- VERNON H.: The Neck disability index. *Journal of Manipulative and Physiological Therapeutics*, 31: 491-502, 2008.

- 11-SHAHEEN A.A., OMAR M.T. and VERNON H.: Cross-cultural adaptation, reliability, and validity of the Arabic version of neck disability index in patients with neck pain. *Spine*, 38: 609-615, 2013.
- 12-MALMSTROM E., KARLBERG M., MELANDER A. and MAGNUSSON M.: Zebris versus myrin: A comparative study between a three dimensional ultrasound movement analysis and an inclinometer/compass method: Intra-device reliability, concurrent validity, inter-tester comparison, intratester reliability, and intra-individual variability. *Spine*, 28 :433-440, 2003.
- 13-ELNAGGAR I., EL HABASHY H. and ABD EL MENAM E.: Influence of spinal traction in treatment of cervical radiculopathy. *The Egyptian Journal of Neurology, Psychiatry and Neurosurgery*, 46: 455-461, 2009.
- 14-OJOAWO A., OLABODE A., ESAN O., BADRU A., ODEJIDE S. and ARILEWOLA B.: Therapeutic efficacy of cervical traction in the management of cervical radiculopathy: A control trial. *Rwanda Journal of Health Sciences*, 2: 25-29, 2013.
- 15-BIBI S. and ARIF M.: Comparison of cervical traction and spinal mobilization with arm movement in the management of non-specific neck pain. *Rawal Medical Journal*, 44: 1-5, 2019.
- 16-LEE C , HEO S., PARK S., JEONG H. and KIM S.: The functional and morphological changes of the cervical intervertebral disc after applying lordotic curve controlled traction: A double-blind randomized controlled study. *International Journal of Environment Research and Public Health*, 16: 1-8, 2019.
- 17-EL SEMARY M., ELZANATY M., GALAL D., EL-SE-ROUGY H., ABDEL Mageed Sh. and TAHA S.: Efficacy of EMG biofeedback cervical traction on patients with unilateral cervical radiculopathy. *International Journal of Psychosocial Rehabilitation*, 24: 46-54, 2020.
- 18-GOYAL A.: Effectiveness of intermittent cervical traction with and without neural mobilization in discogenic cervical radiculopathy. *Spring*, 5: 1-2, 2021.
- 19-ATTEYA A., EL SAYED E., AWF W., AFFIFI F. and EL SEMARY M.: Effect of electromyography biofeedback cervical traction on patients with cervical radiculopathy. *Turkish Journal of Physiotherapy and Rehabilitation*, 32: 1-8, 2021.
- 20-DHINWA R. and MOHD S.: Comparison between inhibitive distraction and intermittent cervical traction on pain and disability in patients with non-specific neck pain. *Journal of Medical Science and Clinical Research*, 2: 3420-3426, 2014.
- 21-HIMANSHI S. and NIRALI P.: Effectiveness of TENS versus intermittent cervical traction in patients with cervical radiculopathy. *International Journal of Physiotherapy and Research*, 2: 787-792, 2014.
- 22-DAWOOD R., KATTABEI O., NASEF S., BATTARJEE K. and ABDELRAOUF O.: Effectiveness of kinesio taping versus cervical traction on mechanical neck dysfunction. *International Journal of Therapies and Rehabilitation Research*, 2: 1-8, 2013.
- 23-YUN Y., LEEA B., YIB J. and SEO D.: Effect of nerve mobilization with intermittent cervical segment traction on pain, range of motion, endurance, and disability of cervical radiculopathy. *Physical Therapy Rehabilitation Science*, 9: 149-154, 2020.
- 24-BELLO A., CRABBE J. and BONNEY E.: Comparative effects of portable and stationary traction in the management of mechanical neck disorders. *Rehabilitation Process and Outcome*, 4: 1-6, 2015.
- 25-SHAKOOR M., AHMED M., KIBRIA G., KHAN A., MIAN M., HASAN S., NAHAR S. and HOSSAIN M.: Effect of cervical traction and exercise therapy in cervical spondylosis. *Bangladesh Medical Research Council Bulletin*, 28: 61-69, 2002.
- 26-AKBARI M. and BAYAT .M: Effects of intermittent traction in patients with cervical osteoarthritis. *Medical Journal of the Islamic Republic of Iran*, 24: 23-28, 2010.
- 27-LAMBA D., RAM D., GAUR N., UPADHYAY R. and BISHT N.: The effect of neural mobilization with cervical traction in cervical radiculopathy patients. *Indian Journal of Physiotherapy & Occupational Therapy*, 6: 45-48, 2012.
- 28-SAVVA C. and GIAKAS G.: The effect of cervical traction combined with neural mobilization on pain and disability in cervical radiculopathy. A case report. *Journal of Manual Therapy*, 5: 443-446, 2013.
- 29-DEEPAK K.: *Manual Mulligan concept: International Edition Paperback*. Capri institute of manual therapy, CreateSpace Independent Publishing Platform, Australia, 2nd ed: 19-20, 2015.

## دراسة مقارنة بين الشد العنقى المستمر والمتقطع فى علاج ألم الرقبة الميكانيكى المزمن

الخلفية: ألم الرقبة الميكانيكى هو ألم بسيط فى الجزء الخلفى والجانبى للرقبة بين الخط القفوى العلوى وشوكة الفقرة الصدرية الأولى مع عدم وجود مرض أساسى محدد يسبب الألم، وقد ثبت أن الشد العنقى المستمر والمتقطع يقللوا من الإحساس بالألم والعجز الوظيفى مع زيادة القدرة على حركة الرقبة للمرضى الذين يعانون من ألم الرقبة الميكانيكية المزمنة.

الهدف من البحث: هو مقارنة تأثير الشد العنقى المستمر مقابل المتقطع على شدة ألم الرقبة والإعاقة الوظيفية والمدى الحركى للرقبة لمرضى ألم الرقبة الميكانيكى المزمن.

الطرق المستخدمة: شارك فى هذا البحث ثلاثون مريضاً من الذكور والإناث، تراوحت أعمارهم من ٢٠ إلى ٤٠ عاماً وتراوحت مدة المرض بين ٣ و ١٢ شهراً. تم توزيع المرضى عشوائياً على مجموعتين علاجيتين متساويتين. المجموعة الأولى تم علاجها بواسطة الشد العنقى المستمر. أما المجموعة الثانية تم علاجها بواسطة الشد العنقى المتقطع. تم علاج جميع المرضى لمدة ١٢ جلسة بمعدل ٣ جلسات أسبوعياً.

النتائج: أظهرت النتائج الإحصائية الخاصة بكل مجموعة إنخفاضاً ملحوظاً فى شدة ألم الرقبة والإعاقة الوظيفية وزيادة ملحوظة فى المرونة السهمية والتاجية والعرضية للرقبة. بينما أظهر التحليل الإحصائى بين المجموعتين أن الشد العنقى المتقطع كان أفضل من الشد العنقى المستمر فى تقليل شدة ألم الرقبة وزيادة المرونة التاجية للرقبة كما أنه لا يوجد فرقاً ملحوظاً بين كلا المجموعتين فيما يتعلق بالإعاقة الوظيفية ومرونة الرقبة السهمية والعرضية للرقبة.