

<p>Adjuvant of Electrotherapy in the Management of Cervical Spondiloarthrosis</p>		<p>Healthcare</p> <p>Keywords: Cervical spondiloarthrosis, patients, range of motion, pain, and electrotherapy.</p>
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Astratto

Background: Cervical spondiloarthrosis or cervical osteoarthritis is a chronic degenerative disease, affecting cervical vertebrae bodies, followed by compression the spinal medulla and spinal nerve root of the cervical part. Spondiloarthrosis is associated with pain, which may be accompanied by nausea, dizziness, noise in the ear, anxiety or mental confusion, headaches, retro-orbital or retroauricular pain and pain in the lateral and medial side of the forearm. The purpose of the study: To better approach of spondiloarthrosis with the aim pain reduction, improve range of motion (ROM), articular maintenance and improve quality of life in general by using best treatment options. Materials and methods of study: The study was conducted from September 2012 - January 2013 in the Mother Teresa University Hospital Center in the Department of Physiotherapy, Tirana, Albania. The total study sample population was 120 patients. They were informed about the study and agreed to be part of the study. Methodical and scientific means were applied in gathering, analyzing and interpreting the data. Patients included in this study underwent therapeutic exercises and electrotherapy for 10 sessions. Their pain and articular ROM were evaluated at the beginning and at the end of treatment: in flexion-extension, in inclination, in rotation. Results: After obtaining, analyzing the study data, we found that the average age was 54 years old (35-73 years old), the gender ratio Female/Male was equal (60F/60M), and 60% patients had no other associated pathology, except cervical spondiloarthrosis. Discussion: Mainly affects older ages, it is thought that has genetic predisposition and involves in the same ratio men and women. Diagnosis of the spondiloarthrosis is based on: clinical examination, radiological imaging, neurological examination, physiotherapy balance. Treatment is divided into medical treatment, to mention few: nonsteroidal anti-inflammatory drugs, myorelaxant, antidepressants and rehabilitation with manual therapy and electrotherapy: ultrasound and transcutaneous electrical nerve stimulation (TENS). When these treatments do not give any positive results, then we resort to conservative surgical treatment. It is necessary the education of the patient to avoid recurrence of pain and limitation of articular ROM's. Conclusions: In this study is managed to reduce pain especially during movements of the flexion-extension (-4.9) and an increase of ROM's movements especially during flexion (+19°). To maintain these results, the cycle of rehabilitation sessions must not only pursue once in a lifetime, but a minimum of once per year.

Introduction

Cervical spondiloarthrosis or cervical osteoarthritis is a chronic degenerative disease that affects the bodies of the cervical vertebrae, which may be followed by compression of the spinal medulla in the cervical part and cervical nerve root.¹ Cervical spondiloarthrosis is also known as spondylosis of the cervical vertebrae bodies and their articular surfaces.¹

Cervical arthrosis is a disease that affects mostly middle age and elderly. Constant subclinical trauma could possibly influence the progression of disease. Disease has greater probability to be shown to those who use their heads to transport different loads, in comparison with others.

Genetic predisposition is not clearly defined. The interaction between diabetes mellitus and cervical arthrosis shows that metabolic factors participate by favoring the factors of cervical spondiloarthrosis.²

Materials and methods of study

The study was conducted from September 2012 - January 2013 in the Mother Teresa University Hospital Center in the Department of Physiotherapy, Tirana, Albania. The total study sample population was 120 patients. They were informed about the study and agreed to be part of the study. In the study, it is obtained a card with patients data: the disease history; objective and subjective examination; profession etc. Patients were treated in the Department of Rheumatology and Department of Physiotherapy. Patients included in this study underwent therapeutic exercises and electrotherapy for 10 sessions. Patients were treated with ultrasound, TENS and low-power laser for 10 sessions. Evaluation of patients before and after treatment made to: the degree of pain and ROM in articular. Methodical and scientific means were applied in gathering, analyzing and interpreting the data. Patients included in this study underwent therapeutic exercises and electrotherapy for 10 sessions. Their pain

and articular ROM were evaluated at the beginning and at the end of treatment: in flexion-extension, in inclination, in rotation.

Results of the study

After obtaining, analyzing the study data, we found that the average age was 54 years old (35-73 years old), the gender ratio Female/Male was equal (60F/60M), and 60% patients had no other associated pathology, except cervical spondiloarthrosis.

Female/ Male ratio in the study was 60 female = 60 males.

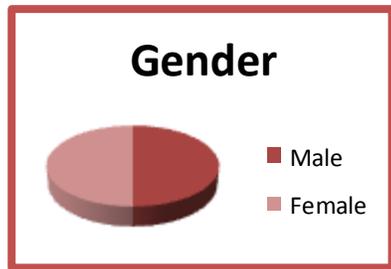


Chart.1. Ratio F/M

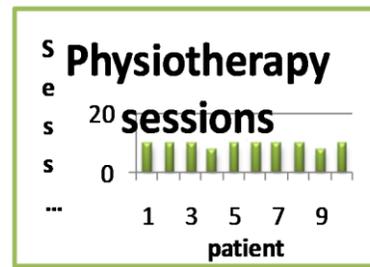


Chart.2. Number of sessions attended by patients.

All patients had an average of 10 sessions of physiotherapy.

	VAS at the beggining	VAS at the end	The difference
Flexion-extension	6.3	1.4	-4.9
Inclination	5.3	1.1	-4.2
Rotation	5.4	1.1	-4.3

Table 1. The degree of pain before and after rehabilitation.

We found that 40% of patients diagnosed with cervical spondiloarthrosis had other accompanying diseases as: HTA; diabetes; gastric ulcer, 27 patients with HTA or 22.5% 15 patients with diabetes 12.5% 6 patients with gastric ulcer 5% and 60% patients had no other accompanying pathology, except cervical spondiloarthrosis.

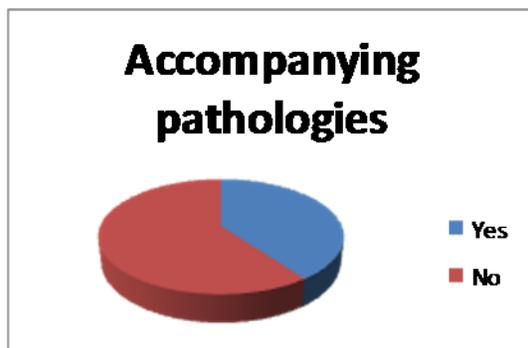


Chart.3. Accompanying pathologies.

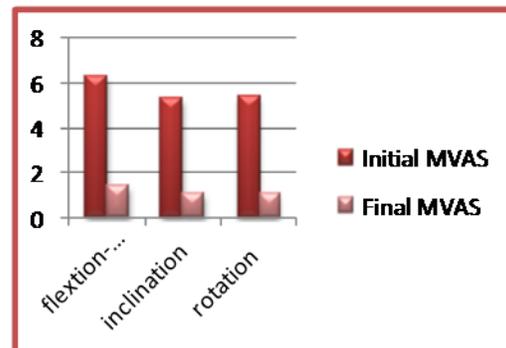


Chart 4: The degree of pain before and after rehabilitation.

According to the above table and chart of observed changes in the degree of pain before and after rehabilitation: Pain evaluation in flexion-extension at the beginning of treatment was on average 6.3 and at the end of treatment was 1.4. Pain evaluation in inclination at the beginning of treatment was on average 5.3 and at the end was 1.1.

Pain evaluation in rotation at the beginning of treatment was on average 5.4 and at the end was 1.1. It was observed significant relieving of pain in treatment where were combined NSAID with rehabilitation techniques.

Chart 5 and Table 2: ROM articulated before and after rehabilitation.

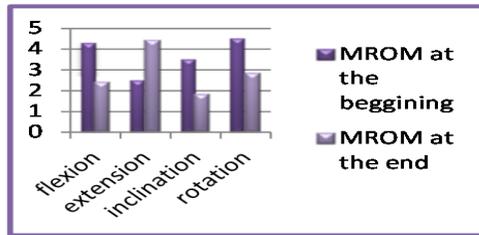


Chart 5.

	ROM at the beginning	ROM at the end	Difference
Flexion	49°	68°	+ 19°
Extension	55°	62°	+7°
Inclination	31°	37°	+6°
Rotation	60°	68°	+8°

Table 2.

From the above chart and table it was noticed that: ROM articular at the beginning of treatment was on average 49° in flexion and at the end of treatment was 68°. ROM articular at the beginning of treatment was on average 55° in extension and at the end of treatment was 62°. ROM articular at the beginning of treatment was on average 31° in inclination and at the end of treatment was 37°. ROM articular at the beginning of treatment was on average 60° in rotation and at the end of treatment was 68°. It is noted a significant improvement of ROM articular after the combined treatment with drugs and rehabilitation techniques.

Discussion

Cervical radiculopathy is a clinical syndrome manifested by compression of a spinal nerve in the neck. This syndrome is typically characterized by upper extremity pain and, occasionally, sensorimotor deficits in the area supplied by the affected nerve. Patients who suffer from this disease are often debilitated, losing time from work and social obligations.

Mainly affects older ages, it is thought that has genetic predisposition and involves in the same ratio men and women. In regards of gender and age: both sexes are affected equally, but begins sooner to males; cervical arthrosis symptoms can also occur in people younger than 30 years, but more often in those aged 40-60.^{2, 3} Radiological changes occur with increasing age, about 70% of patients are asymptomatic, while older than 70 years have significant cervical degenerative—changes in ro-graphy.^{2, 3} Mielopathia is frequent and often accompanies cervical arthrosis. Cervical pain can be immediate and violent in neck. The pain is associated with nausea, dizziness, noise in the ear, or mental confusion or anxiety. Chronic cervical pain if not treated, can cause headaches invalidizing, retro-orbital pain, pain in the temporal part or retroauricular pain.

Spondiloarthrosis diagnosis rely on three aspects: clinical and neurological examination, radiological imaging, physiotherapeutic examination through some tests as: test TINEL, Spurling's test, Hoffman test by German physiologist Paul Hoffman.^{4, 5, 6, 7} Testing of the way of walking; Lhermitte test by Jean Lhermitte or also known as Barber Chair test.⁸

Radiological examination shows narrowing of the disc space, forming osteofits, cervical lordosis loss, osteoarthritis of apofisis and narrowing of the diameter of the vertebral canal. MRI can detect pathology on

asymptomatic patients. According to a study, about 57% of patients older than 64 years had herniar disc and about 26% of patients in this group age had spinal (medulla) compression.⁹

Computerized tomography is another examination method, which serves to detect cervical spondiloarthrosis, cervical mielopathia and radiculopathia. Mielographia is used to study nerve root lesion.

Electromiographia (EMG) is an examination that controls muscle function. Differential diagnosis is discussed with Pott's disease of the cervical region; cervical intervertebral disc prolapse; spinal medulla tumors; adhesive capsulitis; trauma of cervical region; ancilosant spondylitis, metabolic bone disease.

Risk factors: Cervical spondiloarthrosis is frequently among persons who have had neck injuries, trauma, dancers, professional gymnastics, Congenital narrow spinal canal, atlanto-axial instability which is often present in people with Down syndrome, cerebral paralysis and rheumatoid arthritis are known as risk factors. Tobacco consumption contributes to the emergence of degenerative disc disease, Whiplash syndrome; age around 60. 70% of women and 85% of men, show constant changes type of arthrosis in cervical radiography.^{10, 11,}

Treatment consists on: Treatment for reducing pain and improving ROM's articular, improvement of neurological deficits and functionality, prevention of iterations. Treatment should be adjusted depending on the patient's status, presenting symptoms, examinations and stage of disease. Treatment is divided into: Medical treatment, to mention few: nonsteroidal anti-inflammatory drugs, myorelaxant, antidepressants and rehabilitation with manual therapy and electrotherapy: ultrasound and TENS. TENS is otherwise known as transcutan electrical stimulation of nerves.^{12, 13, 14}

TENS sends an electrical pulse through the skin, not painful to the patient's periferic nerves. This is a non-invasive treatment with no side effects which facilitates chronic pain and articular rigidity leading to its improvement.^{14, 15}

Ultrasound is a non-invasive therapy that is used in the treatment of neck pain and articular problems. Gel is applied in cervical region surface and distributed through the device in the whole area. This method uses ultrasound waves with a high frequency to heat deeper tissues, for instance; muscles. This therapy provides increased blood circulation, relaxation of muscle spasms, reduces inflammation and helps on relieving pain.^{14, 15}

Rehabilitation protocol includes: manual therapy, massage, immobilization of the cervical region, mechanical and manual traction neck. Therapy modalities through (ultrasound, TENS; low-power laser). Education and articular maintenance by cervical orthoses are the basis of conservative treatment of cervical spondiloarthrosis. Recreational therapy helps the patient to maintain column, social skills and motivation of the patient, increased patient independence enables integration in the community.

Surgical treatment is used in severe cases, when disease symptoms associated with radiculopathia and mielopathia, when conservative treatment does not give any positive results.

Patient education occupies an important place to avoid recurrence of pain and limitation of amplitude articular.^{16, 17, 18}

Conclusions

It was confirmed an increase of ROM articular by functional plans and a global reduction of pain from the beginning to the end of the study. So to get, patients in the study reduced pain especially during flexion-extension movements (-4.9) and increased ROM especially during flexion movements (+19°). Patients increased

their autonomy and selfconfidence as a result of positive outcomes by the following treatment. To maintain these results, the cycle of rehabilitation sessions must not only pursue once in a lifetime, but in at a minimum of once a year. Patients are recommended to commit in an autonomously way all their daily activities at home; and were given a program of exercises to be performed in indoor conditions several times during the week, and when the pain is worsen. Arthrosis is a chronic disease that can be cured and can be stopped its progression through the combined drug treatment and rehabilitation techniques.

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