NECK PAIN IN CRONIC CERVICAL DEGENERATIVE DISEASES AND REHABILITATION THERAPY

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Abstract: Our work reports a study of 75 patientsmean age was 49.6 years, with cervical spondylosis who underwent a complex rehabilitation therapy in the PhoenixRehabilitation Clinic from Craiova.
The patients were evaluated and treated for a minimum 2 years (the main inclusion criteria was a minim 4 therapy session in the clinic). We try to show the way that pain change (decrease, free of pain, moderate or severe residual pain) ant theway it influence the functionality and the symptomatology associated with neck pain and cervicalgia.
Patients who had severe pain were the most likely to have poortherapeutically result. However, no clinical features can havesignificance of predicting the therapy outcome. Also, like in other study that we use for comparing, the degree of painis not always the result of the joint and bone degeneration degree and is related with the involvement of the patient in following the therapeuticexercises for stabilizationof neck that patient do almost 3or 4 times of week, for least 30 minutes.
These results indicate that rehabilitation exercises are effective in improving the cervical range of motion and help the patient maintain for a more period of time a pain which influence as little as possible their life and day life activities.
Keywords*:* cervical, degenerative; neck pain; exercise

Introduction

In 2008 Gonza´ lez-Iglesias J. et al. [1] quote Jette et al., from 1994 that underline the fact that approximately 25% of all outpatient physical therapyvisits consist of patients with symptoms involvingthe neck region [2].
In present time, chronic pain due to cervical pain is one of leading causes of disability across the world, especially in the developed society. Cervical spondylosis is an age-related degeneration, but we discover this modification, especially by a simple radiographic investigation at the group age of 30 years and less, the degeneration of bones and cervical discs being similar to the group age over 50 years.
In many people, the degeneration does not cause any symptoms, but also for many others the symptoms can be very disturbing in all day life activities.
Multiple articles published seeking to appreciate the association, correlation of symptomatology and different treatments of an altered cervical spine conditions compared to normal controls subjects, or different treatments and their results in different situation.
We analyse the patients that have this pathology and they address to our rehabilitation services, in Phoenix Medical Clinic Craiova, for symptomatology, range from mild to severe, like: cervical pain or irradiated in one or both hands, weakness develops in a part of a hand or arm, stiff neck, movement of the neck may make the pain worse or determine dizziness, headache starting at the back of the head and go over the top to the forehead etc.
Physical therapists utilize a number of interventionsin the management of neck pain including joint manipulation (non-thrust and thrust), exercises, massage,thermo-therapy or electrotherapy [3]. However, robust evidence to support the use of many of these therapeutic strategiesfor neck pain is lacking [4, 5, 6]. The Philadelphia Panel Clinical Practice Guidelines concluded that many commonly used interventions for patients with neckpain lack sufficient evidence to justify their clinical use [7].

Material and methods

A total of 75 (46 females and 29 males) patients with chronic neck pain, diagnosis with cervical spondylosis were evaluated at Phoenix Medical Clinic Craiova, in the last 2 years. This was the main inclusion criteria for this study a minim 4 therapy sessions in the clinic, with 2 therapy session in one year, the therapy was delivered in ambulatory. The age range was between 31 and 78 years old.

As well as demographic characteristics, we evaluate the patient education level, urban or rural provenience, and exercise status. In addition, Visual Analog Scale (VAS) was used for an objective evaluation of symptomatology. The evaluation were performed at the beginning of the therapy, then at te second therapy session (T_I), after 6 month - T_{II}, (in order to observe the lasting effect of therapy and the modality in which patient understand the role of prophylaxis by therapeutically exercises and of repetition pain), and after 18 month (T_{III}), after 4 therapeutically session.

Initially, a complete assessment (pathogeny, clinical, laboratory and functional status) of patients from the study was made by the center complex rehabilitation team.

In the clinical evaluation we appreciated the general physical condition (including cardiovascular function - blood pressure, heart rate, status of peripheral vascular sistem, respiratory, digestive, neurological) in order to find the contraindications for electrotherapy and to individualize the prescribed therapy.

We claim the fact that in the Romanian literature does not have some functional validated scales available to clinicians, in order to objective report of results after therapy.

The studied patients treated in our clinic, have some particularities that influence the outcomes. Some of our patients that are living in rural area, they are mainly reticent to kinetotherapy and exercises due the fact that they do heavy work at home. Especially they report joint pain after working and so they associate the work with the kinetotherapy.

We divide the patients in two groups, one is the study group and the other is a control group:

- The patients from the study group perform all the 10 session of therapy, have performed exercises at home, at least 3-4 times of week, for 30 minutes in the period between our the evaluations, and the control group patients how did not perform the exercises.
- The patients from the control group were those patients that refuse the kinetic exercises due to their believes that the effort/movement make the symptoms worse and the treatment "***must be something without movement***".***Lack of time*** was the principal excuse when the patients refuse the exercises for their therapy.

From anatomical point of view, the neck includes the cervical spine and the muscles and ligaments that surround and support it. We explain to all patients, in accessible terms, the physiology and biomechanics of this region.

All the individual discussion with the patients were made in order to make the patient realise the importance of exercises and physiological motion of the spine, the importance of awareness of their health status in generally because they must be not only the receiver of therapy but also an ***active part*** of the therapeutic team.

Table 1.Demographic Characteristics of Patients.

		Study group 49 patients	Control group 26 patients
Gender n%	**Total =75 (100%)**	**49**	**26**
	Woman	**31**	**15**
	Male	**18**	**11**
Profession	**Total =75 (100%)**	**49**	**26**
	Pensionary	**14**	**9**
	Working	**35**	**17**
Educational Level	**Total =75 (100%)**	**49**	**26**
	Primary	**40**	**24**
	University graduates	**9**	**2**
Environment origin	**Total =75 (100%)**	**49**	**26**
	Urban	**39 (52%)**	**10 (13.3%)**
	Rural	**10 (13.3%)**	**16 (21.3%)**

In terms of environmental origin we have an allocation of 65.5% of the studied group of patients in urban and rural patients 34.6%, with 46 (61.3 %) woman and 29 (38.7%) male. (Figure 1)
The proactive way of understand the therapy lay on the medical culture, education level of society (only 11-14,6% patients have university study, and only 2 of them refuse kinetotherapy) that we notice being especially deficient in the rural section of population. The fact that the patient become important active part, learn to take care and manage some of the symptoms by the home available therapeutic therapy (maintaining a good posture, stretching, exercises and massage, inflammatory and antalgic medication, heat therapy, electrotherapy).

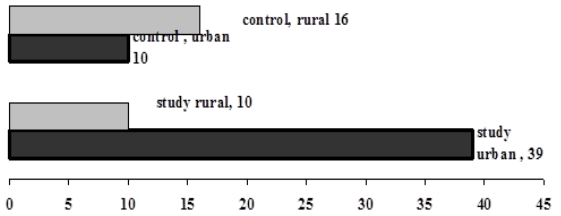

Fig.1. - Environement origin of patients

Fig.2. - Gender repartition

Distribution of patients depending on the area of origin denote, in our research, a higher incidence of cervical spondylosis in urban areas.

Table 2. – Distribution of age group

Age group	No. patients	Study group	Control group
30-40	8	8	0
41-50	23	18	5
51-60	15	9	6
61-70	19	11	8
71-80	10	3	7
	75 (100%)	49 (65,3%)	26 (34.6%)

The age range was presented in table 2 and figure 3, the numbers present the fact that the pain in cervical spine is presented in all ages, starting early in adult life, that being the effect of life changing style. Also the symptoms are more disturbing for the persons that are in activity.

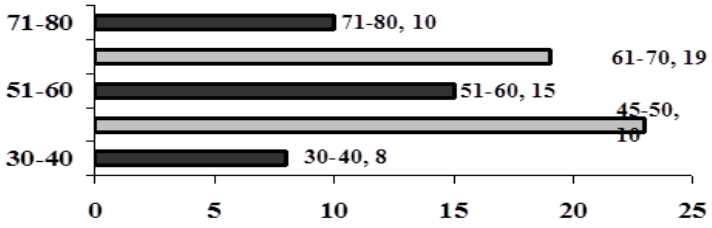

Fig. 3 - Distribution of age group

Rehabilitation Program
The goals of rehabilitation was the following:
- Suppression of: pain, neck stiffness and contracture
-Increase and improve balance, power, and endurance of the cervical muscles
-Improve the posture
- Restore the balance and muscular synergism
- Return of patient to unrestricted activities of daily life.
Rehabilitation program was applied for 10 sessions, with a frequency of 5 days/week.

We individualise the program in function of the patient particularity, like life style, believes regarding the kinetotherapy exercise and use of medication for pain.
Electrotherapy was applied with the role of decrease the pain, reduce the contracture, for the vasculo-trophic, magnetotherapy, laser, ultrasound, diadinamic and interferential curents.
Also, we applied educational measures, explaining to each patient what is the neck pain, what is important for the therapy and what can decrease the symptomatology for

long time; the possibilities that he can use to alleviate the disturbing symptoms of spondylosis at home.

The kinetic program:

- in the clinic, daily sessions, for 30 minutes, 1/day, 5 days/week with the supervision of physical therapist
-recommended to be repeated at least for 3 or 4 time the same session of exercises, for 30 minutes every day.
- correction of posture, by awareness of posture and different positions in the mirror
- passive and active mobilization
- stretching / auto-stretching for muscular groups
- exercises to restore cervical spine and back muscle balance
- exercises for stabilization and coordination, maintaining neutral position of cervical spine

Visual Analog Scale (VAS): Pain intensity was assessed using to the VAS. VAS consist of horizontal line 100 mm in length (0= No pain, 100= Most severe pain). The patient marks on the line the point that they feel represents their perception of their current state. [8]

The severity of pain during rest, during activity pain and night pain was evaluated using the Visual Analog Scale (VAS), the medium value vas then recorded for each patient, in the proposed evaluation time ($T_{I-II-III}$), and then a mean value for each study group was recorded.

Table3. Media values for Visual Analog Scale (VAS)

Nr. crt	VAS in study group			VAS in control group		
	I	II	III	I	II	III
MEDIA	7.2 (6-8.1)	4.6 (3.8-6.2)	2.6 (1.8-3.1)	7.6 (7-8.3)	5.8 (5.8-6.9)	4.6 (3.9-5.1)

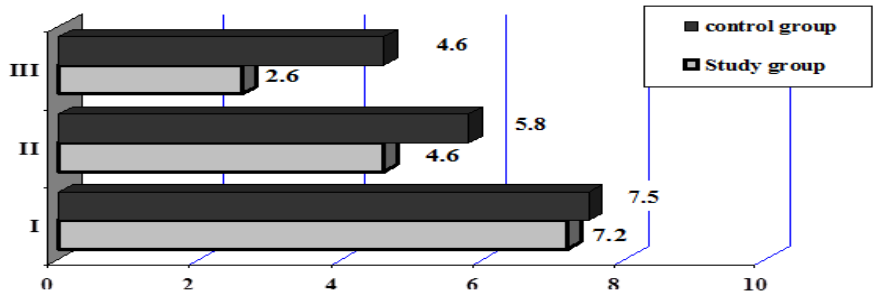

Fig.4 - Media VAS for the subjects in the evaluated moments

At the end of the study, all the patient recognise the reduce of amount of pain indicating that pain reduction was significant regardless of gender, age group and education or life environment of patients, or type of therapy.

Discussion

In our studied group of patients the predominance age was of patients with the age group over 41-50 years old, which matches the substrate etiologic and pathogenic of cervical spondylosis.We notice also some cases at the young patients, the diagnosis being stablished mainly by simple radiography, and they were mainly form the urban area.

Neck pain is a frequent source of disability causing human suffering and affecting the well-being of individuals. Just as health is a state of complete physical, mental and social wellbeing, neck pain is associated with many health problems. [9] Chronic neck pain has been shown to be associated with a decrease in quality of life in several studies. [for example 10,11]

Studies report that over a third of patients with neck pain will develop chronic symptoms lasting more than 6 months [12], and nearly a third who experiencea first time onset of neck pain will continue to reportcontinued health care utilization for their symptoms at a 10-year follow-up [13].

Painful distresses of the neck are particularly common, especially in working adults, knowledge of causes and triggers of disease recurrence and occurrence of disease

prevention measures must be well known to the therapist.

Individualization of rehabilitation programs is very important, based on the same therapeutic principles, but differs depending on age, severity of disease, related disorders, mental status of the patient, what the patient like/believe/want etc.

Kinetotherapy must respected the *principle of progressivity*, starting with the simple exercises, lightweight passive at first and then executed by the patient in active mode, gradually increasing the duration of the program, increasing the resistance movements and the speed of execution.

Permanent *home exercise program* is crucial in relieving symptoms and maintain the benefice of therapy the patient carry out in the clinic; it must be executed daily or 2-3 times a day, and when the pain decrees they must be completed 3-4 times a week.

These results indicate that rehabilitation exercises are effective in improving the cervical range of motion and help the patient maintain for a more period of time a free/decrease pain statuswhich influence as little as possible their life and day life activities.

Conclusions

Daily activities involve overloading the body structures of cervical spine, but there is a statistically significant increase in the incidence cervical pain among the young people; perhaps in the future things will be even worse, the cases of cervical pain increasing considerably from year to year through lifestyle changes of young people, in particular by the fact that increased time spent in front of a computer and the position totally inadequate to be taken by students and students generate various functional disability.We conclude that neck pain can be presented at all group.

But we want to emphasise the main problem we notice and that must be changing in order to have old age persons with limited spine problems. The kinetotherapy and therapeutic exercises must be inoculated to persons, especially at the young age when that can be easier integrated and so can become a life style. The Romanian society need this changes, because many diseases are due to lack of exercises and lack of knowledge of hygienic life style also, and the European statistics underline our believe.

We also notice the fact that Romanian literature lack functional evaluation scales for spine also translated and validated scales and questionnaires, in order to ease the research work of clinician therapists.

We are content of the fact that even we have patients that did not have medical knowledge about the spine and did not know exactly all the beneficial effects of kinetic therapy , they accept to do home exercises and explain us the fact that the exercises that they learn in clinic and they perform at home, ease the symptomatology.

The facts about spondylosis and neck pain are all documented in medical literature. We try to underline that the mentalities of patients regarding neck painas an important key in the rehabilitation therapy management do to fact that the patients sometimes lack the knowledge of benefice of medical exercises due to their age, environement of life and school preparation.

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