METHODS AND TECHNIQUES IN RECOVERING PATIENTS OF ANKYLOSING SPONDYLITIS

Andreea Domnica Buburuzan[1], Maria Daniela Crăciun [1,2]
[1]University of "Stefan cel Mare" Suceava, Romania
[2]Interdisciplinary Research Center in Motricity Sciences and Human Health, Romania

Keywords: ankylosing spondylitis, bilateral sacroiliac, medical rehabilitation;

Abstract: Ankylosing spondylitis starts at the sacroiliac joint, affecting in a progressive way the spine's joints, causing incorrect body postures and respiratory complications. The treatment implies the correction of the wrong body posture and the formation of the correct attitude, accompanied by respiratory physiotherapy exercises, which results in slowing the progression of the ankylosing spondylitis. Each kinesiotherapy session begins with warm up exercises, followed by stretching. All the exercises in the recovery program were actively taken up by the subject.Conducting this study I tried to provide additional information in recovery of the ankylosing spondylitis by applying physical therapy exercises accompanied by active breathing exercises.

Introduction

Rheumatic diseases represent a very important part of pathology. It takes up different forms and requires individual treatment according on the stage the patient is in.

The ankylosing spondylitis is part of the seronegative spondyloarthropathies, disease that affects mainly the peripheral and the spine's joints. The main characteristic of this disease is the early damage of the sacroiliac joints, its evolution leading to numerous morphological and functional disorders [1].

The disease's prognosis and evolution depends largely on how the patient and therapist act together - particular importance is given to the treatment method.

The factors that cause the disease are congenital or acquired during one's life. The disease has a degenerative evolution, the consequences are extremely difficult to recover and treat [2].

In this type of disease, physical therapy is the most common way in recovery, being considered a treatment of choice, whose objectives can be reached namely through daily exercise [3].

Material-method

The experiment was performed on a male subjects aged 50 (smoker), ankylosing spondylitis diagnosed with bilateral sacroiliac stage IV. The patient presents the following symptoms: pain manifested in the second part of the night, mixed algo-functional syndrome with axial and peripheral location, paresthesia located in the lower limb, physical fatigue and stiffness[3].

The study was conducted between May, the 30th, 2015 - January, the 10th, 2016 .

The recovery program was based on different methods and procedures in active physical therapy.

In this paper the following assumptions were made:

- ♣ Is it possible to combat pain and inflammation by using physical therapy methods?
- ♣ Is there the possibility to prevent and/ or correct the wrong body's posture through physical after the spondylitis was installed?
- ♣ Can the means and methods used in physical therapy increase the joint mobility?

The research's purpose is to develop and apply a kinetic recovery program in order to avoid the secondary comorbidities and the prevention of ankylosis.

Before the initially assessment, two specific questionnaires for patients with ankylosing spondylitis were created to: the Bath Ankylosing Spondilytis Functional Index (BASF) and the Bath Ankylosing Spondilytis Disease Activity Index (BASDAI). Both of them assessing the degree of fatigue felt by the patient, the spine's pain, the joint's swelling, the duration of the pain felt during the morning and the daily activity carried by the patient [4].

The objective assessment of the patient included a series of tests that showed its clinical situation.

Biologically, the absence of inflammatory syndrome is observed, due to normal erythrocyte sedimentation. The C-reactive protein is increased.

Clinical data together with laboratory evidence argues for a moderately active form of the disease.

Table 1 - Objective examination

Objective exam		Initial data	Final data
1.	Height	170 cm	170 cm
2.	Weight	56 kg	56 kg
3.	Blood pressure	Standing: 120/70 mm/Hg	R:120/70 mm/Hg
		Effort: 150/80 mm/ Hg	E:140/70 mm/Hg
4.	Heart rate	R: 80 b/min	R: 75 b/min
		E: 90 b/min	E: 85 b/min
5.	Respiratory rate	R: 20 c/min	R: 18 c/min
		E: 30 c/min	E: 25/min
	Erythrocyte sedimentation rate (ESR)	11 mm/h	
	C reactive protein	1,31 mg/l	
	Hemoglobin	13 g/dl	
	Oscillometry	1,5 mm/Hg	

Table 2. – Clinical examination

Nr.	Clinical examination – the spine's mobility	Subject: M.V.	
		Initial data	Final data
1.	Schöber's Test	1,5 cm;	2 cm;
2.	Schöber Test – modified	1 cm;	1,5 cm;
3.	Ott Test	31 cm;	31,5 cm;
4.	Stibor Test	50 cm;	51,5 cm;
5.	Chin-sternum distance	6 cm;	5,5 cm;
6.	Head-Wall distance	8 cm;	7,5 cm;
7.	Tragus-acromion distance	Left – 4 cm; Right –5 cm;	Left–3,5 cm; Right–4,5cm;
8.	Fingers-ground distance	20 cm;	18,5 cm;
9.	Mendel Test	Positive	Positive
10.	Tripod Test	Positive	Positive

11.	Chest perimeter in - breathe	84 cm	86 cm
12.	Chest perimeter in - exhale	82 cm	80 cm
13.	BASDAI Test	15 pct	14 pct
14.	BASFI Test	4.5 pct	4.1 pct

The study's objectives:

The objectives of the kinetic treatment in ankylosing spondylitis:

- ♣ Pain and inflammation release;
- ♣ Reducing the rigidity;
- ♣ Improve the respiratory function;
- ♣ The awareness of the correct body position and its adoption;
- ♣ Increase / maintain the joint's mobility;
- ♣ Maintaining the muscle tone and strength,
- ♣ Improve life's quality.

All kinesiotherapy methods used in the recovery of patients with ankylosing spondylitis should be individualized and adjusted according to the evolutionary threshold of the pathology. It will be taken into account the limited capacity of effort, due to the damage respiratory and / or cardiovascular system and the predisposition to fractures [5,6].

Individualized physical therapy program will be conducted for the rest of the patient's life in 2-3 daily sessions of about 15 to 30 minutes.

Each session begins with warm up exercises, followed by stretching. All the exercises in the recovery program were actively carried out by the subject. For those exercise performed in supine, the patient required a pillow in order to sustain the head [7].

Fig. 1 - active exercises in standing.

Fig. 2 - Exercises with objects (stick, ball Bobath)

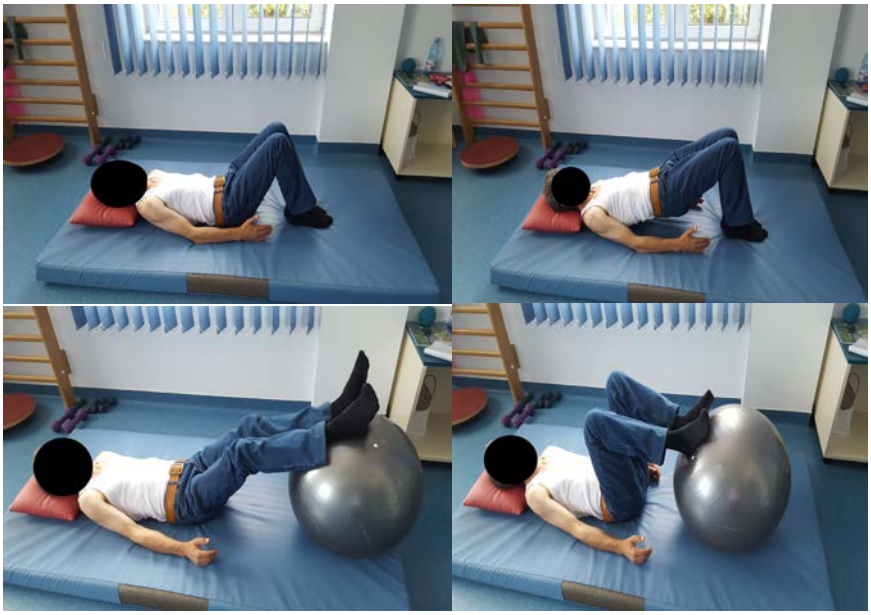
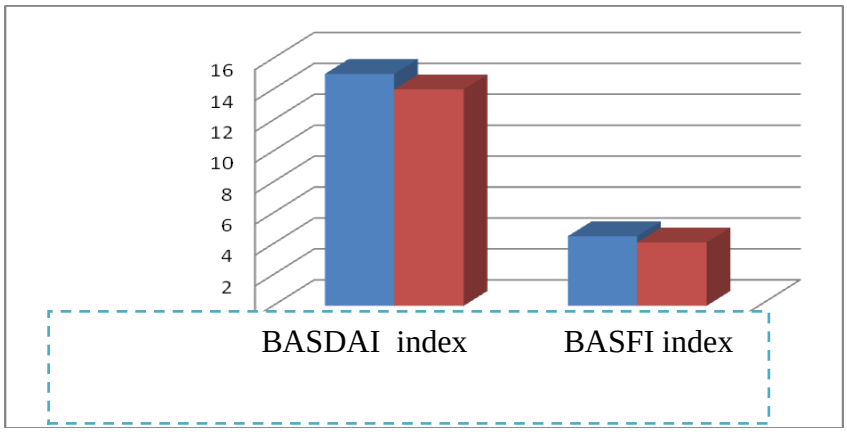


Fig. 3 - Simple and objects exercises in supine (ball Bobath)

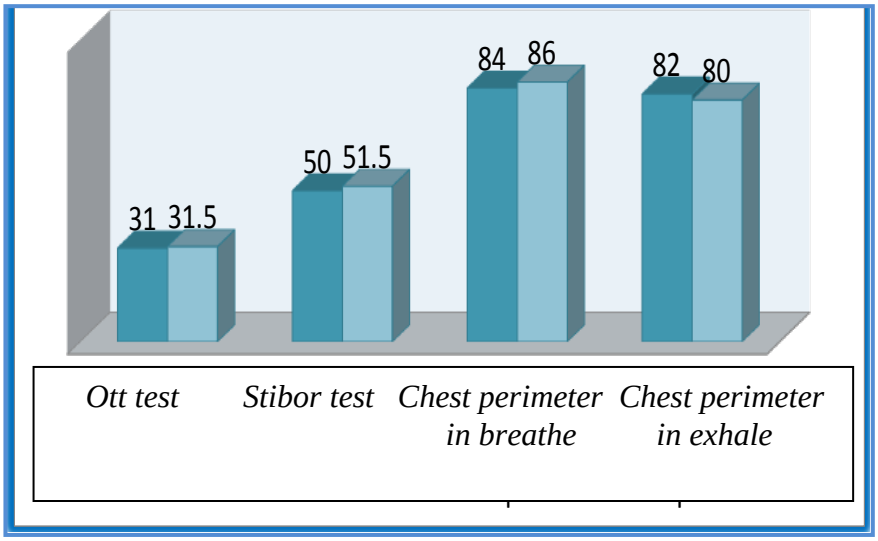
Results



Graphic1.
BASDAI and BASFI Tests

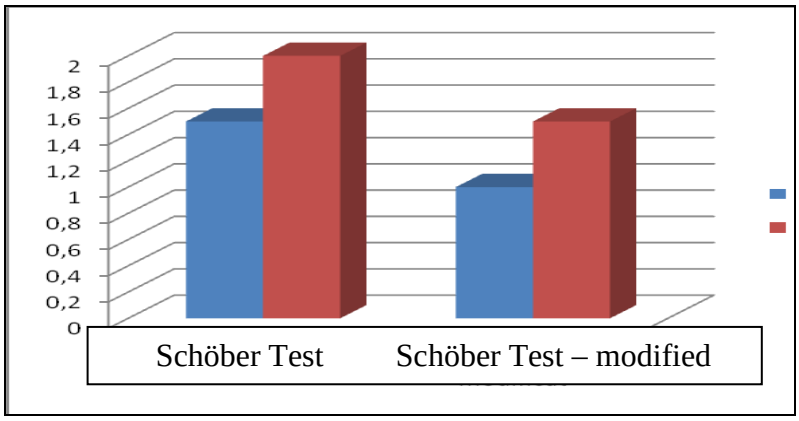
Following the final evaluation changes were noticed in the BASDAI score. The patient noted that the exercise carries out in the program have influenced the better quality of its life. In the final evaluation the BASDAI score had an average score of 4.1

. Following the final evaluation, a slight decrease in the BASFI score was observed, from 15 to 14, the prolonged standing being maintained more easily.



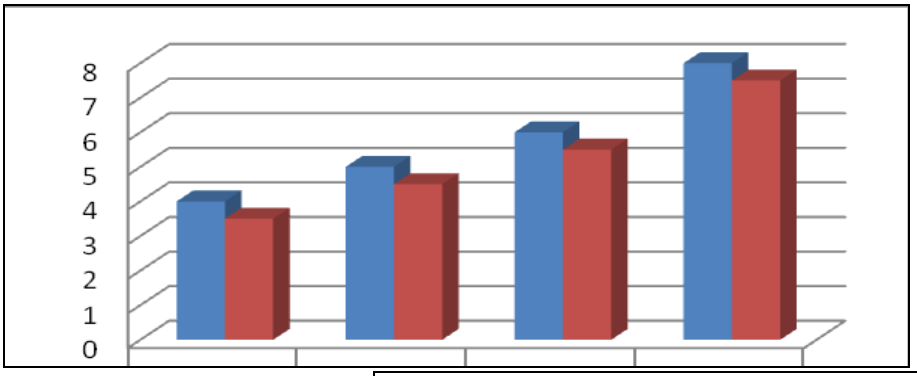
Graphic 2.
Testing the thoracic spin's mobility

After the final evaluation, a slight increase of the joint's mobility of the chest was observed. Following the final testing of the spine's mobility, the following data were recorded: the Mark Test grew with a percent of 0.5% and the Stibor Test evolved by 1.5%.



Graphic3.
Testing the lumbar spine's mobility

Following the final evaluation, the increasing mobility of the joints' mobility was recorded in the Schober Test: the Schober Test increased by 0.5% and the Schober Test modified - rose by 0.5%.



In the final testing of the cervical spi ed mobility, comparing t

Graphic 4.
Testing the cervical spine's mobility

The M.V.'s outcome is not a spectacular one, because the treatment period was a relatively short one.

By making physical therapist program, was aimed to maintain and develop joint mobility, muscle tone and chest.

Conclusions

Following the study certain conclusions have been highlighted:

• An well established kinesiotherapy program in a patient with ankylosing spondylitis can slow the progression and improve the symptoms;

• Through the applied kinesiotherapy methods and techniques, the stiffness was reduced, maintaining the joint's mobility;

• The kinesiotherapy program also had a prophylactically purpose.

• The applied kinesiotherapy program underlined an improvement in the patient's life quality.

• Adapting the kinesiotherapy program according to the stage's disease and the patient's psychical condition, an increased confidence in the patient's capacities was obtained, the effects of the treatment being visible.

• The patient was educated to continue the exercises at home .

References:
[1]. Ionescu Ruxandra, *Esențial în reumatologie ediția a 2-a revizuită*, Editura Medicală Amaltea, București, 2007;
[2]. Müller-Lander U., F. Meier, R. Wöhrler, A. Ruß, *Compedium de reumatologie*, Editura FarmaMedia, Târgu-Mureș;
[3]. Moțet D., *Enciclopedia de kinetoterapie Vol I-II*, Editura Semne, București, 2010;
[4]. Manole V., Manole Lăcrămioara, *Evaluare motrică şi funcţională în kinetoterapie*. Editura Pim, Iaşi 2009;
[5]. Cordun Mariana, *Kinetologie medicală*. Editura Axa 1999;
[6]. Sbenghe Tudor. *Kinesiologie- stiinta miscarii*, Editura Medicală, Bucureşti, 2005;
[7]. Sbenghe Tudor. *Kinetologie profilactică, terapeutică şi de recuperare*, Editura Medicală, Bucureşti 1987.

METODE ȘI TEHNICI ÎN RECUPERAREA PACIENTULUI CU SPONDILITĂ ANCHILOZANTĂ

Cuvinte cheie: spondilită anchilozantă, sacroileiită bilaterală, recuperare medicală;

Rezumat: Spondilita anchilozantă debuteză la nivelul articulației sacroiliace, afectând progresiv și articulațiile coloanei vertebrale determinând în timp posturi deficitare și complicații respiratorii. Tratamentul presupune corectarea posturilor deficitare și formarea unui reflex de atitudine corectă însoțită de exercitii de reeducare respiratorie, ceea ce conduce la încetinirea evoluției spondilitei anchilozante. Fiecare ședință de kinoterapie începe cu mișcari de încălzire, urmate de stretching. Toate exercițiile din programul de recuperare au fost executate activ de subiect.

Prin intermediul studiului am încercat să aduc un plus in recuperarea spondilitei anchilozante prin kinetoterapie aplicând exerciţii active însoţite de exerciţii de respiraţie**.**