

Effects Of Physical And Rehabilitative Treatment On Quality Of Life Of Ankylosing Spondylitis Patients

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Abstract

INTRODUCTION

The complex assessment of the rheumatic patients' state of health is now more and more successful due, among other factors, to the large variety of functional rehabilitation treatment devices. The increasing numbers of patients suffering from ankylosing spondylitis (AS), who reach elderly ages while having a functional disability, pose a burden to the health budget. Therefore, firm medical activities as well as more strict protocols of treatment are needed.

The older idea that all patients suffering from ankylosing spondylitis inevitably acquire vertebral ankylosis with severe disabilities is wrong. Under an intensive and sustained treatment, ankylosing spondylitis can have a favorable course if therapeutic goals are precociously applied and are continued with perseverance.

The main clinical features are inflammatory back pain, joint stiffness and fatigue, resulting

in varying degrees of structural and functional impairments and reduced general health (1–3). Over the last years a revolution in the treatment of ankylosing spondylitis has taken place, in terms of improved understanding of basic disease mechanisms, new imaging techniques and criteria for classification and early diagnosis, use of biological drugs [tumour necrosis factor alpha (TNF- α)-blockers], and increased insight into the risk of cardiovascular disease (CVD) (1, 4–7). With the huge advances in pharmacological treatment, it is debatable whether rehabilitation programmes are still needed for people with ankylosing spondylitis. However, recent studies have shown that a combination of biological treatment and physical therapy (PT) (8), occupational therapy (OT) (9), or multi-disciplinary rehabilitation programmes (10–12), gave synergetic effects

and produced positive benefits on pain, function and health-related quality of life, indicating that non-pharmacological interventions will also be important for ankylosing spondylitis patients in the future. Rehabilitation is therefore still considered one of the main treatment strategies (13).

The best time to start the physical rehabilitation treatment in ankylosing spondylitis is the period when the enthesitis, before synostes, are formed. During this period, we aim to preserve, for as long as possible, the mobility of the spine as well as its correct posture.

Among the rheumatic diseases, ankylosing spondylitis benefits the most from the physical medicine and rehabilitation. In our study, we started from the hypothesis that the rehabilitation physical treatment fully contributes to the improvement of the course of the disease and on the patient's quality of life. The main goals of this research were to demonstrate the effectiveness of the kinetic and physical rehabilitation treatment by trying to identify its impact adapted to disabilities peculiar to ankylosing spondylitis patients, depending on the stage of disease.

METHODS

It was a prospective study carried out on a group of 20 patients diagnosed with ankylosing spondylitis, defined according to New York criteria modified in 1984(14). The subjects of the group were randomly selected from the patients of Safdarjang Hospital, New Delhi.

INCLUSION CRITERIA:

Subjects diagnosed with ankylosing spondylitis
Aged more than 18 years

EXCLUSION CRITERIA:

Aged less than 18 years
Presence of other rheumatic disease
Presence of psychiatric disease
Associated invaliding organic disease

Data was collected prospectively and directly, by means of clinical examination and measurements as well as interviews relating to the filling in of self-administered questionnaires in the day 0 and day 14.

The following data of the patients were assessed:

Demographic variables: age, sex

Clinical variables: ESR, chest expansion, index of course of the disease (BASDAI)

Functional status: BASFI (functional index of ankylosing spondylitis)

Quality of life: HAQ-AS (Health Assessment Questionnaire Ankylosing Spondylitis)

REHABILITATION PROGRAM

The rehabilitation program was attended daily, 6 days a week, under our supervision. The objectives of the program were:

To control the immune-inflammatory process

To control pain

To fight contractures, retractures and muscular functional unbalancing

To re-educate posture, symmetry, body alignment and walk

To recover the range of motion, the muscular forces and strength

The rehabilitation treatment was based on hydro-kinetic-therapy (HKT) and individual kineto-therapy (KT). We combined these with various physical procedures with a view to ensure favorable conditions for therapy by means of motion. The active KT sessions were preceded and followed by classical massage, aiming at fighting pain, relax the contracted musculature.

We used the following electrotherapy procedures: ultrasonotherapy, ultrasonophoresis for their antialgic, myorelaxing, fibrinolytic, endothermic effects upon the periarticular areas.

With all the patients of group, the disabling character of the ankylosing spondylitis was due to the fact that the functioning of hip joint had been compromised and the

thoracic spine had been exaggeratedly kyphosed.

The postural treatment aimed at avoiding the development of a severe thoracic kyphosis in case of patients in stage 1 and 2, while for those in stages 3 and 4, correction was attempted as well as avoiding the hip and knee flexion. Posture was adapted to the clinical condition of the patient and it was controlled considering the level of pain.

All the patients got instructions regarding the way they have to live with their suffering, these instructions being as important as the correct treatment itself of each stage.

RESULTS

In our study group of subjects the ratio of men:women was of 3:1 (15 men= 75% and 5 women= 25%), data which roughly corresponds to that in the literature.

Depending upon the stage of the disease, most patients were in stages 2 and 3 (table 1). Concerning the sex difference with regard to the stage of disease, we noticed a more advance age of women in the stage 2/3 and 3, while in case of men, the patients in incipient ages were younger than those in an advanced stage, which means that in case of patients with a more belated beginning of disease, the disease has a fast course and develops severe disabilities.

Table 1

	Stage 1	Stage 2	Stage 2/3	Stage 3	Stage 3/4	Stage 4	Total
Number	3	6	1	8	1	1	20
Percentage	15%	30%	5%	40%	5%	5%	100%

Though disabled, the disease does not mean that patients have to give up their professional activity, as most patients in our study group being active (80%) as far as work is concerned.

The first clinical variable monitored was ESR (erythrocyte sedimentation rate), which decreased moderately on day 14 from the rehabilitation treatment, compared to day 0. Mean ESR in study group at day 0 was 12.24 and 11.03 at day 14 (Table 2). Another disease activity variable which changed under the impact of the physical and rehabilitative treatment was the chest expansion, which grew from an average of 2.31 to 2.92 (Table 2).

The BASDAI index, a compound, which reveals the effect of the course of the disease upon the spine and peripheral joints lowered from the value 38.8 to 31, showing the beneficial effect of the physical-kinetic treatment upon some major symptoms of the disease (Table 2). The BASFI index

(15), decreased from the value 32.53 to 23.30 showing the beneficial effect of treatment upon some major symptoms of the disease (Table 2).

Quality of life was measured using the Health Assessment Questionnaire Disability Index, modified for Ankylosing Spondylitis (HAQ-AS). The mean value and standard deviation was calculated on the basis of scores resulted from the self administrated HAQ-AS questionnaire applied to patients in study group. The assessment was done before (day 0) and after the treatment (day 14). The mean value of HAQ-AS score decreased significantly from 1.030 to 0.54 (p value < 0.05) that meaning the patient's quality of life improved after experiencing the physical-kinetic program (Table 2).

Table 2

	MEAN ON DAY 0	MEAN ON DAY 14
ESR	12.24	11.03
CHEST EXPANSION	2.31	2.92
BASDAI	38.80	31.00
BASFI	32.53	23.30
HAQ-AS	1.03	0.54

DISCUSSION

Ankylosing Spondylitis is a chronic inflammatory disease with a moderate severity and potential for evolution. An earlier diagnosis, a compliant patient and competent medical personnel can substantially influence the patient's quality of life. Rehabilitation treatment should be adapted according to the activity degree in intensity as well as grade of suffering, taking into consideration the following: stage of disease, context, psychologic, socio-familial, socio-professional and pathology of each case. The main idea behind the rehabilitation treatment is to offer them a normal life as possible, now and in the future.

The main aim of this study was to evaluate the overall effects of a multidisciplinary in-patient rehabilitation programme for patients with ankylosing spondylitis. The results demonstrate that the rehabilitation programme resulted in improvement in terms of significant reductions in disease activity, pain, improved function and well-being.

The improvement in patient-reported disease activity (BASDAI) is noteworthy, as this captures the patients' experienced reduction in the main AS symptoms pain, stiffness and fatigue, which are important determinants for daily functioning and health-related quality of life (3,16).

Kinotherapy, along with other medical treatments continue

to play a vital role, in minimizing disability and in the evolution of disease. The kinetic program was started early to prevent and limit the vertebral column deviation and affections of the other peripheral joints. The treatment needs to be followed throughout the evolution of disease, irrespective of the stage, even in final stages, which are often wrongly considered irreversible. Kinotherapy can be performed both individually and in groups. The basic techniques were dynamic; in the program we applied to our patients and we aimed to relieve both muscular contractures and joint pain. We also found that swimming proved to be one of the most effective exercises.

Joint mobilization and muscular stretching regarding suppleness treatment, should not result in pain. But in the initial stages of the disease, even in painful inspiration, patients were instructed not to give up the thoracic respiration, even if the pain was intolerable. An important part of the treatment program is occupational therapy, which involves training patients on the principles of joint protection and energy preservation by practicing certain therapeutic sports, which could become part of their lives.

The HAQ-AS has increased the credibility and use of comprehensive measurement techniques involving validated patient self-report and has led to new application of outcome assessment. Outcome measurement is rapidly increasing in use, and we anticipate increased focus on a small number of instruments with supplemental questions used for disease or study specific queries. We believe the HAQ-AS to have appropriate attributes to be among those considered for use as standard instruments.

From our study we conclude that physical and medical rehabilitative treatment has a beneficial effect on a patient with AS on both the disease activity and the functional status. The treatment was more effective in early stages of disease than in the later stages. So the early instatement of rehabilitative treatment program is an essential condition in delaying the onset of disability in spondylitic patients.

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