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RISK REDUCTION OF FRACTURES IN PATIENTS WITH OSTEOPOROSIS, WITH NO PHARMACOLOGICAL TREATMENT

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Abstract:
Osteoporosis is a "silent epidemia". From the experience of a recovery clinic and reading related literature, I concluded that antiosteoporosis treatment does not significantly reduce the risk of fractures if the osteoporotic patient does not have toning muscles,if he is not taught to balance while standing or walking to prevent falls.Without these,the patient will be prone to fractures.
This study was made under careful observation and treatment of 120 patients between 15.03.2009 and 05.05.2014 in the Department of Rehabilitation Therapy in "St. Spiridon" Hospita, ,inside the city of Braila The patients were devided into two groups:One group with algo functional problems determined by Lombar OPSI DMO and the second group with algo functional problems of the hip joints and hip DMO (coxofemural osteoporosis). The grade of diability was established on the basis of :WOMAC, articular and muscular balance ,Waddell Main and Rolland Morris quiz tests for pain in lombar and hip mobility.All patients were tested for risk of falling.The success was due to physiotherapy in appropriate formulas, refreshing massages,kinetic therapy programmes for every objective.
Conclusions: Patients from the 2 groups did not suffer any fractures from falling in the last 5 years, falls were 70 % reduced and results were similar with or without anti-resorptive treatment.
Key words: *osteoporosis ,fractures,kinetic program.*

INTRODUCTION

Osteoporosis is a "silent epidemic"; fractures are often the first sign of osteoporosis, a disease characterized by the low bone mass and the deterioration of the microarhitecture of the bone tissue which generates bone vulnerability and leads to increase of fracture risks with an excess of morbidity of 30 -40 % of females and 15 % of males.The objective of this paper is to demonstrate the importance of kinetic treatment in maintaining the stability with increasing muscle force, maintaining balance in walking and to prevent people with osteoporosis from falling and being prone to fractures. As motivation, from the experience of the Recovery Clinic and reading specialty literature, I concluded that treatment against osteoporosis does not semnificatively reduce fracture risk, if the osteoporotic patient does not have tonic muscles, if he is not taught to have balance in walking in order to prevent falls, conditions without which he is prone to fractures.

MATERIALS AND METHODS

This study was done with direct observation of 120 treatment cases in the period of 15th Marcg 2009 and 5th of May 2014 in the Recovery Medical Unit of " Saint Spiridon Hospital" of Braila and the S.C "Fiziter" SRL Braila. The patients were grouped in 2 lots. One lot with functional problems determined by Lombar OPSI DMO and a lot with functional problems of the hip joint and hip DMO (coxofemural OP). Every patient had: an examination sheet,specific to the locomotor disorder, an evaluation test for pain,an evaluation test for the disability, an evaluation test for the risk of falling down.
The degree of the disability was established on the basis if the: Western Ontario McMaster University (WOMAC),articular and muscle balance, Tests and quizzes from Waddell Main and Roland Morris for pain and lombar mobility of the hip. All patients were tested for the risk of falling down.

OBJECTIVES

Increasing the mobility of the area, the increase in muscle strength and resistance for improving walking, climbing and descending stairs ,increase in resistance to effort,balance in standing and walking in order to prevent falling down and maintaining walking for a longer period of time.All these objectives were reached with the help of psyshiotherapy in adequate formulas ,invigorating massages,and kinetic programs for each patient.

CONCLUSIONS

The studied lot has not suffered fractures caused by falling down in the last 5 years and falling down has been reduced in a proportion of 70% and the results were similar in both situations , with or without antiresorptive treatment. The aim of the work is to demonstrate the importance of taking kinetic treatment in order to maintain stability by having balance during walking and to prevent people who are prone to fracture from falling down.

As a further objectives, this paper aims to be a guide for kinetoprophylaxy, physiotherapy and kinetic recovery musculoskeletal for each specific person with osteoporosis which generates disabilities, creating programs for each segment affected.From Clinic experience and from reading specialty literature about recovery we concluded together, that antiosteoporotic treatment does not significantly reduce the risk of fracture, if the osteoporotic patient has a tonic muscle, if he does not learn balance in standing and walking in order to prevent falls, conditions without which he is prone to fracture

DEFINITION

Major health problem with a mobidity rate of 30 to 40% in famales and 15% in males older than the age of 50. It is a silent epidemic and often, fractures are the first sign os osteoporosisIt is Deteriorating quality of life through: pain, depression, disability. It causes significant economic costs and mortality.

I made a diagnosis based on clinical examination according to location of the chronic pain, kyphosis, scoliosis or cervical lordosis, 2-3 cm height loss due to vertebral compaction,spontaneous fractures,shortness of breath,gastrointestinal symptoms and lasting disability,depression, secondary causes of osteoporosis :indicators (treatment glucocorticoids intestinal tract diseases, hematological diseases). X-ray examination based on,central absorptiometry dual X-ray beam (DXA) DMO:

TREATMENT:

*Remedia*l: sleep- in algetic form

Medicamentary: pain relievers; osteoporotic: estrogen,, calcitonin, bisphosphonates, teriparatide, strontium

Surgical.

Prevention: Calcium 1-1,5g / day + Vit D3 400-800 / day, exercise.

SCOR TDXA	
Normal	≥ -1
Osteopenia	-1 - -2.5
Osteoporosis	< -2.5
Severe Osteoporosis	< -2.5 + ≥ 1 fractures

RISk of FRACTURES (%)		
TYPE OF FRACTURE	MALES	FEMALES
FOREARM	4.6	20.8
HIP	10.7	22.9
Coloana	8.3	15.1
Humerus proximal	4.1	12.9
Fracture	22.4	46.4

Physical therapy lowers the risk of falls, improves mass,strength and bone quality, aerobix exercises *Progressive resistive training* which increases muscle strength.

Stretching: increasing flexibility in joints and peri-articular tissues

Balance and postural training increases quality of life.

MATERIALS AND METHODS

This study was conducted through direct observation and follow-up of 120 cases under observation and treatment for the period March 15, 2011 -05 May 2014 in the Department of Medical Rehabilitation at the "Sf. Spiridon "Brăila.Patients were grouped into 2 groups .A lot with algo functional problems resulting from lumbar osteoporosis nd a lot with coxofemoral osteoporosis meach group divided into 2 subgroups with and without antiosteoporotic treatment.

Study groups included: patients with osteoporosis of the hip associated with other locomotor disorders with and without antiosteoporotic treatment, patients with various etiologies ,osteoporosis lumbar spine with and without antiosteoporotic treatment were all screened for risk of falling.

Demographic tags of study groups:

- 24 individuals were male, representing 20%, 96 females, representing 80%.

- Patients come from both urban and rural as follows: 35% rural; urban areas, 65%, and all were involved in various activities. Patients were hospitalized in different stages of evolution of the OP, followed a physical therapy and for each OP location or associated diseases m thus promoting balance and preventing falls.

Each patient had his specific examination sheet for locomotor diorder, a pain assessment test, a test for assessing disability , and a fall risk assessment test.

The degree of disability was established based on: Functional Index WOMAC (Western Ontario MacMaster University), range of motion, balance and muscle MAIN tests and Waddell questionnaires for low back pain and mobility .Total score = SUM (points obtained in response to the 9 questions) Interpretation : • minimum score: 0 • maximum score 9. Roland and Morris index .With higher the score the more severe disability associated with back pain. A score of 0 indicates no disability and a score of 24 indicates that there is disability • A score> or = 14 indicates a severely affected patient.

For patients with disabilities resulting from osteoporosis or hip back, I developed a recovery plan aimed, increased lumbar and hip mobility, program to improve walking, climbing and descending stairs, increased mobility in all joints, legs; increase stamina: standing, balancing to avoid falling, walking for a long period of time.Lumbar and hip stability is generated by periarticular muscle force.In the following recovery program applied we obtained the following results, shown in the graph below.Graphic representation of pain with Womac.Cu index using WOMAC questionnaire buttons create an estimate of pain. The chart can be seen the presence of pain at the initial stage and the final estimated by the WOMAC questionnaire.

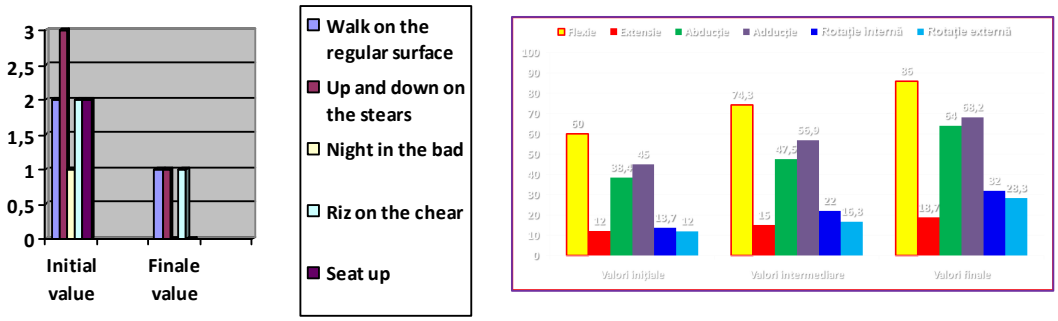


Fig. 2. Graphic representation of pain with Womac

The degree of mobility is shown in the graph below. Improving joint mobility can be seen throughout the study.Evolution was favorable on all mobility plans which demonstrates the effectiveness of physical therapy programs and also the objectives set.The muscle strength responsible for the lumbar and hip stability and lanance significantly improved after the treatments. Muscle strength improvements can be observed during the the study. There are favorable developments on all muscle groups tested, which demonstrates the effectiveness of the program and also the fulfilling od the main objective, which is reducing the risk of patients falling down.

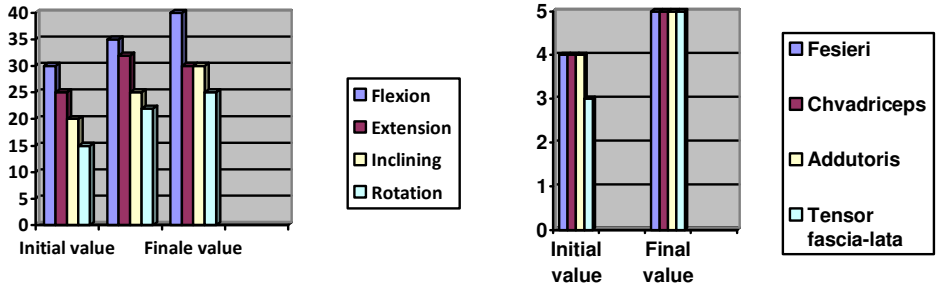
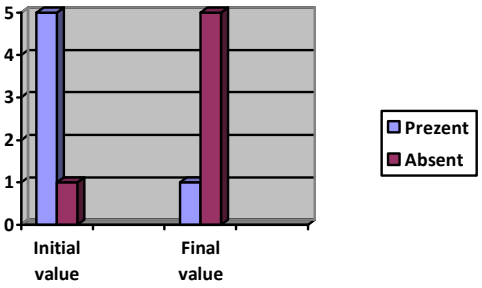


Fig.3.There are favorable developments on all muscle groups tested,

The Patrick sign is found in most cases of hip pathology, in the entire studied group only 73 subjects showeb no sign of Patrick in the initial examination, however after applying the kinetic program the number of patients showing no Patrick signs were 46, which demonstrates goof efficiency of the recovery program applied.



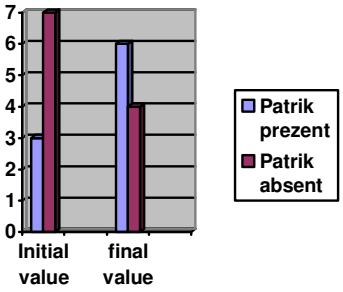


Fig.4. Representation of the pain in the lumbar area **Fig.5. Graph. Representation of the Patrick sign**

With the help of the graphic, presence of pain can be seen in the initial and final stage.Graph of Mobility in the lumbar area with degrees of mobility from all perspectives.Graphical representation of the degrees of mobility demonstrates the effectiveness of the program as the final kinetic are higher than baseline.

Balance and postural control is a process involving three components: the body, the task that has to be fulfilled and the environmental conditions under which it occurs. The balance is based on the reaction balance (balance), which are important in achieving the posture and locomotion, that is, to maintain the body's center of gravity within the support surface.

They are controlled by proprioceptive or labyrinthine reactions and are of two kinds: There are four simple tests that can reveal functional decrease legs and are considered as independent predictors for failure. Graphic representation of test values Tandem Standing Inability to stand in tandem at least 10 seconds indicates a high risk of falling.Finally, the patient is asked to perform 8 steps in tandem.So can see from the chart below that the final values of Tandem Standing the test increased significantly indicating a much better balance in the card test positive afost 62.4% of septic patients is reduced to 42.6% at the end of treatment with a benefit of 22%.

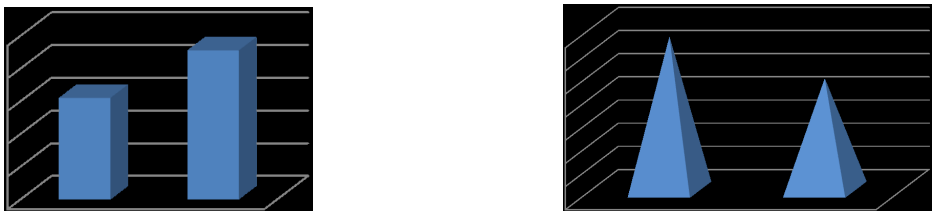


Fig. 6.Graphical representation of values to test the evaluation of normal walking speed (seconds)

Time to walk a distance of 4 feet .Graphical representation of values in evaluation test normal walking speed (seconds) positive was 71.2% of patients who at the end of treatment is reduced to 57.6% with a benefit of 13.6 %. Values decreased after the program this is due to the kinetic improve the balance and stability in walking subjects.

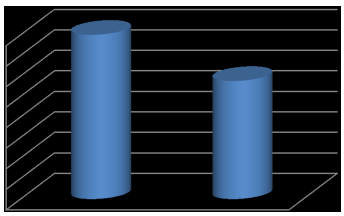


Fig.7. Graphical representation of test values UP & Go

Patient rises from a normal height chair with handles, normal steps for 3 meters ,returns and travels the same distance to the chair and sits on it. This test assesses the ability of a person and his muscle function. Values greater than 12 seconds is a risk factor for falls. Was positive for 81.2% of patients at the end of treatment is reduced to 37.6% with a benefit of 42%:

Chair Rising Test - assesses the strength of muscle contraction, the patient is asked to stand up and sit down 5 times a normal-height as fast as possible - without the use of arms. The arms are kept crossed on his chest. A patient who can not stand up and sit down 5 times or who needs more than 10 seconds to perform this test has an increased risk of falling. Positive was for 92.4% of patients .Later in the treatment,it is reduced from 67.8% to

25.6% benefit, which determines tone and increase of muscle strength, recovering and restoring joint mobility and postural capacity, and having a the proper at

CONCLUSIONS

This study confirms that obviously the treatment improves functional recovery in an osteoporotic patient .The patient be integrated into a comprehensive recovery program based on the location of osteoporosis for lifetime. Drug treatment must be done according to BMD endocrinologist, rheumatologist, rehabilitation, any improvement in this parameter does not exclude the risk of falls, risk of new fractures when talking to people over 50 years with multiple other comorbidities generating vertigo, imbalance in walking, uncertainty. Kinetic program, over a 10-day hospitalization is only initiatorfor an osteoporotic patient recovery. He will continue at home under the supervision of physiotherapist and family doctor. With this paper we aim to warn and attract more subjects in the osteoporotic patient recovery in all its complexity, resulting in the creation of multidisciplinary teams with the same goal: reducing the risk of falls, increased ADL acquis independent motor , social, inform people about the risk of osteoporosis, sufficient intake of vitamin D and calcium in the diet, sufficient intake of vitamin C during the growth of skeleton, smoking cessation and limiting alcohol . Reasonable medication, especially corticosteroid treatment diseases is likely to induce secondary osteoporosis, prevention of postmenopausal osteoporosis by hormone replacement combat sedentary lifestyle and early mobilization after therapeutic rest, encouraging sports activities, especially those outdoors (sunlight, walking) in osteopenia and osteoporosis kinesiology and last line, reducing balance rehabilitation and prevention from the risk of falling down.

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STRATEGIES OF IMPLEMENTING SPORTING-RECREATIONAL ACTIVITIES IN TOURISM AT THE LEVEL OF THE ARGEŞ DISTRICT

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Abstract

Starting from the assumption that the organization of the sporting-recreational activities represent a complex instructive - educational activity which must contribute to an enhancement of knowledge, to the formation of practical abilities, to the development of observation, of thinking and initiative, as well as to the stimulation of the pupils' interest for independent activities with a recreational purpose, we recommend that the objectives of the activities should be established very carefully in order to correspond to the possibilities and interest of school children.The research carried out by us confirmed the above assumption, in the sense that the development of a touristic area cannot be done without a diversity of sporting-recreational activities which play the role of improving the general culture and the acquisition of information, of opening to socialization, to love and respect for nature. Thus, the cultural, natural and touristic potential of the Arges district can be better known and valorized, using intensely the forms of practising tourism, accessible to the different categories of individuals. Tourism is important not only in modelling and shaping human personality but also in the economic area, as it is one of the main sources which bring considerable revenues.

Key Words: *Arges, tourism, sporting-recreational activities, implementation*

SCOPE OF RESEARCH