Ovidius University Annals, Series Physical Education and Sport / SCIENCE, MOVEMENT AND HEALTH
Vol. XXII, ISSUE 2 Supplement 2022, Romania
The journal is indexed in: ERIH PLUS, Ebsco, SPORTDiscus, INDEX COPERNICUS JOURNAL MASTER LIST, DOAJ DIRECTORY OF OPEN ACCES JOURNALS, Caby, Gale Cengage Learning, Cabell's Directories

Science, Movement and Health, Vol. XXII, ISSUE 2 Supplement, 2022
September 2022, 22 (2): 233 - 241
Original article

THE IMPACT THAT COMPLEX REHABILITATION TREATMENT HAS ON RETIRED ATHLETES WITH SPECIAL GAUGE

MATEI Victor[1], CHIRIAC Marius Sorin[2], LARION Alin[3], OLTEAN Antonela[3], CAZAN Florin[3]

Abstract

Aim. This study shows the opportunity to see people with special gauge are persons that have more than 1.95 cm and weights more than 110 kg, they have a special type of body. With this kind of body they can practice only some type of sports like: rugby, basketball, volleyball.

Methods. Sixteen retired athletes were analyzed in the Techirghiol spa and rehabilitation sanatorium for sports activity. Patients were hospitalized for 10 days and followed a complex treatment of rehabilitation consisting of hydrokinetotherapy, physical therapy, mud baths, massage and physiotherapy.

Results. Due to the specific configuration, athletes with a special size have a tendency to deteriorate more after they leave high-performance sports, they show a more significant degradation, as a result of the specific demands of the position they wer
e assigned to in the team, the sequelae of some overloads on the joints, especially in the shoulder, knee, hip, spine area.

Conclusions. The research hypothesis was confirmed, according to the data obtained using the visual analog scale, the pain felt in different areas of the body was relieved to a large extent.

The most affected joints of former athletes were the knees, shoulders and coxofemoral joint, but lumbar spine conditions were also encountered.

*Keywords***:** athletes, special gauge, rehabilitation.

Introduction

People with special gauge are persons that have more than 1.95 cm and weights more than 110 kg, they have a special type of body. With this kind of body they can practice only some type of sports like: rugby, basketball, volleyball. (Brukner and Khan, 2017)

Also because of the special body type they have also a lot of medical conditions like lumbar pain, knee pain and problem with the shoulders. (Badea, 2012a)

In this paper we wanted to see the medical problems of retired athletes with special gauge and what can we do for them in the future.

Material and method

Sixteen retired athletes were analyzed in the Techirghiol spa and rehabilitation sanatorium for sports activity. Patients were hospitalized for 10 days and followed a complex treatment of rehabilitation consisting of hydrokinetotherapy, physical therapy, mud baths, massage and physiotherapy.

The group of patients was made up of people with special dimensions aged between 65 and 78 years of age, and have been practicing rugby for at least 20 years. Patients also presented comorbidities such as hypertension, diabetes, rheumatoid arthritis, however these additional conditions did not represent contraindications to the spa treatment.

During the hospitalization, they were evaluated by the attending physician according to the clinical observation sheet, of the Vas scale and with the help of the Gonio Pro mobile application. The effects of the treatment were analyzed, focusing on the general state of health but also on the state of main joints that were used during activity.

[1]National University of Physical and Sport Education, Bucharest, Romania
[2]Balneal and Rehabilitation Sanatorium Techirghiol, Constanta, Romania
[3]Faculty of Physical and Sport Education, Ovidius University of Constanta, Romania

Results

Table 1. VAS Scale Evaluation

NUMBER	Admission	Discharge
C1	6	2
C2	4	2
C3	6	2
C4	3	1
C5	4	2
C6	6	2
C7	6	2
C8	3	1
C9	3	1
C10	4	2
C11	6	2
C12	6	2
C13	3	1
C14	6	2
C15	6	2
C16	4	2

Table 2. Observational Evaluation according to the Cinical Observation Sheet

Number	**Assessment**	**Reassessment after treatment**
C1	2 - right knee swelling - knee edema	0
C2	0	0
C3	0	0
C4	1- right elbow – right elbow swelling	0
C5	0	0
C6	Bilateral elbow swelling	0
C7	Bilateral elbow swelling	0
C8	0	0
C9	0	0
C10	Elbow edema	0
C11	0	0
C12	0	0
C13	0	0
C14	0	0
C15	Right elbow edema	0
C16	0	0

Table 3. Evaluation of the lumbar spine - Schober test

Subjects	Admission	Dischargement
C1	Positive Test	Positive Test
C2	Positive Test	Negative Test
C3	Positive Test	Negative Test
C4	Positive Test	Positive Test
C5	Positive Test	Positive Test
C6	Positive Test	Negative Test
C7	Positive Test	Negative Test
C8	Positive Test	Negative Test
C9	Positive Test	Positive Test
C10	Positive Test	Negative Test
C11	Positive Test	Negative Test
C12	Positive Test	Positive Test
C13	Positive Test	Positive Test
C14	Positive Test	Negative Test
C15	Positive Test	Negative Test
C16	Positive Test	Negative Test

Table 4. Goniometric assessment of the knee joint according to the Gonio Pro mobile application

Right Knee Flexion						**Left Knee Flexion**					
Initial evaluation			Post-treatment evaluation			Initial evaluation			Post treatment evaluation		
Subjects	Active	Passive	Subjects	Active	Passive	Subjects	Active	Passive	Subjects	Active	Passive
C1	80°	85 °	C1	95 °	100 °	C1	80 °	85 °	C1	95 °	100 °
C2	85 °	90 °	C2	95 °	100 °	C2	85°	90°	C2	95 °	100 °
C3	85 °	90 °	C3	90°	100 °	C3	90°	90 °	C3	90 °	100°
C4	90 °	100 °	C4	100 °	100 °	C4	95 °	100 °	C4	95 °	100 °
C5	90 °	100 °	C5	100 °	100	C5	95 °	100 °	C5	95 °	100°
C6	85 °	90 °	C6	90°	100 °	C6	90°	90 °	C6	90 °	100°
C7	85 °	90 °	C7	95 °	100 °	C7	85°	90°	C7	95 °	100 °
C8	80°	85 °	C8	95 °	100 °	C8	80 °	85 °	C8	95 °	100 °
C9	80°	85 °	C9	95 °	100 °	C9	80 °	85 °	C9	95 °	100°
C10	85 °	90 °	C10	95 °	100 °	C10	85°	90°	C10	95 °	100 °
C11	85 °	90 °	C11	90°	100 °	C11	90°	90 °	C11	90 °	100°
C12	90 °	100 °	C12	100 °	100 °	C12	95 °	100 °	C12	95 °	100 °
C13	90 °	100 °	C13	100 °	100 °	C13	80 °	85 °	C13	95 °	100 °
C14	85 °	90 °	C14	90°	100 °	C14	85°	90°	C14	95 °	100°
C15	85 °	90 °	C15	95 °	100 °	C15	90°	90 °	C15	95 °	100 °
C16	80°	85 °	C16	95 °	100 °	C16	95 °	100	C16	90 °	100°

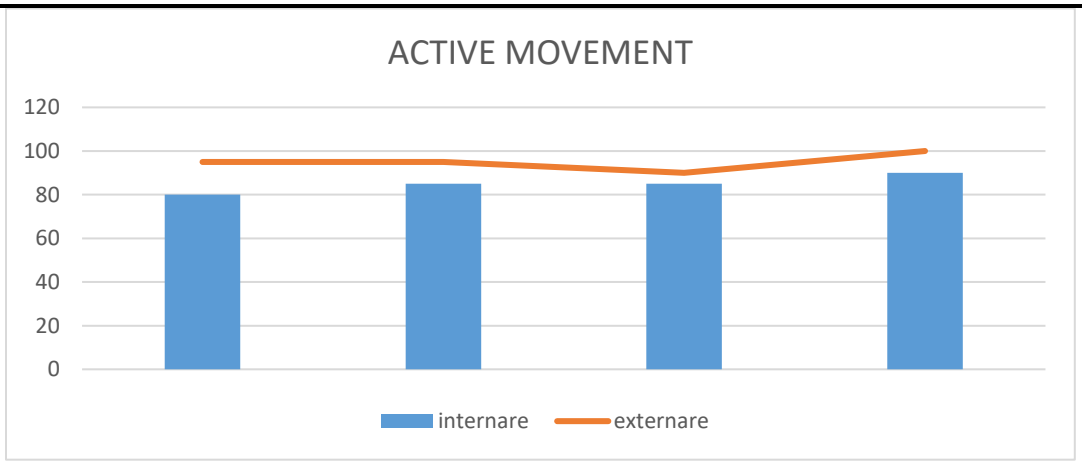

Fig 1. RIGHT KNEE extension- admission/dischargement

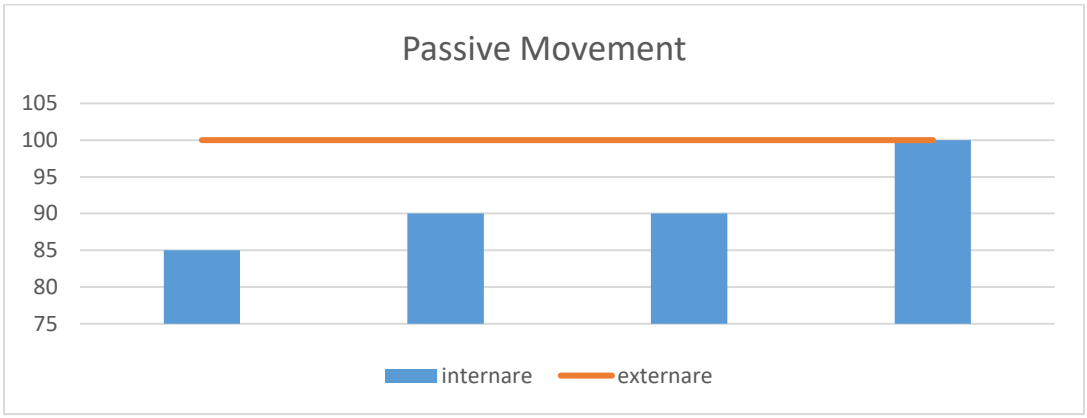

Fig 2 Right knee flexion – dischargement. Passive Movement

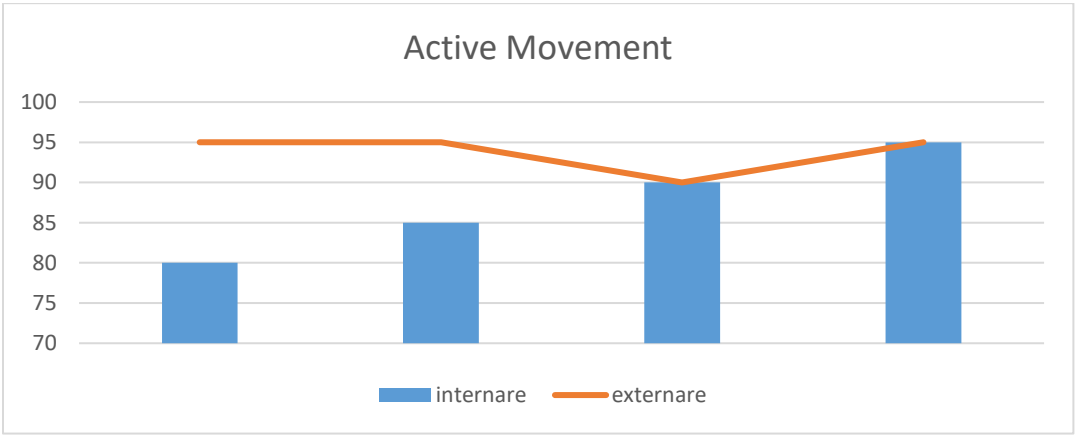

Fig 3 Left Knee Flexion admission-dischargement

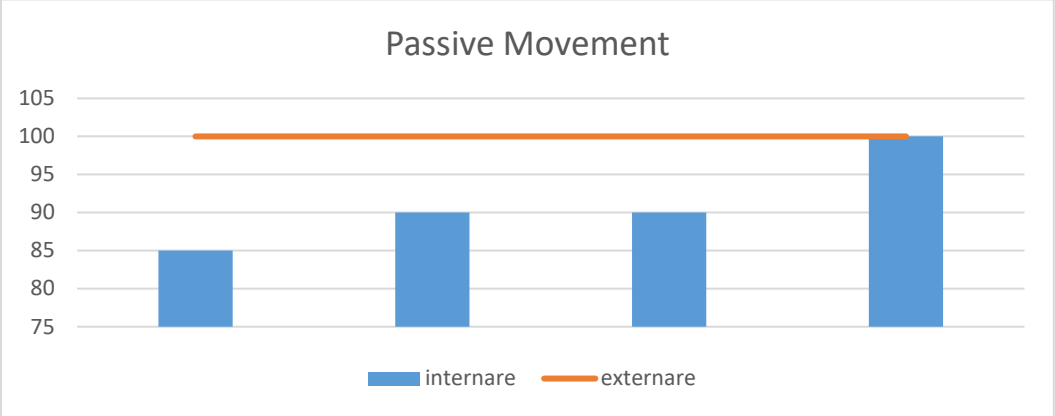

Fig 4 Right knee flexion Admission-Dischargement. Passive Movement

Table 5 Evaluation of the shoulder joint according to the Gonio Pro application

Right shoulder flexion						**Left shoulder flexiom**					
Initial assessment			Post treatment assessment			Initial assessment			Post treatment assessment		
Subjects	ActiVe	PassiVe	Subjects	ActiVe	PassiVe	Subjects	ActiV	PasiV	Subjects	ActiVe	PassiVe
C1	100°	110 °	C1	110°	110°	C1	105°	110 °	C1	110°	110 °
C2	110 °	130°	C2	110°	120°	C2	110°	130 °	C2	110°	120°
C3	115 °	130°	C3	120°	120 °	C3	110°	130°	C3	115°	120°
C4	100°	120°	C4	110°	120°	C4	105°	120°	C4	110°	120°
C5	100°	110 °	C5	110°	110°	C5	105°	110 °	C5	110°	110 °
C6	110 °	130°	C6	110°	120°	C6	110°	130 °	C6	110°	120°
C7	115 °	130°	C7	120°	120 °	C7	110°	130°	C7	115°	120°
C8	100°	120°	C8	110°	120°	C8	105°	120°	C8	110°	120°
C9	100°	110 °	C9	110°	110°	C9	105°	110 °	C9	110°	110 °
C10	110 °	110 °	C10	110°	110°	C10	110°	130 °	C10	110°	110 °
C11	115 °	130°	C11	110°	120°	C11	110°	130°	C11	110°	120°
C12	100°	120°	C12	120°	120 °	C12	105°	110 °	C12	110°	120°
C13	100°	120°	C13	110°	110°	C13	105°	120°	C13	110°	110 °
C14	100°	110 °	C14	110°	110°	C14	105°	110 °	C14	110°	120°
C15	115 °	130°	C15	110°	120°	C15	110°	130°	C15	115°	120°
C16	100°	120°	C16	120°	120 °	C16	105°	110 °	C16	110°	120°

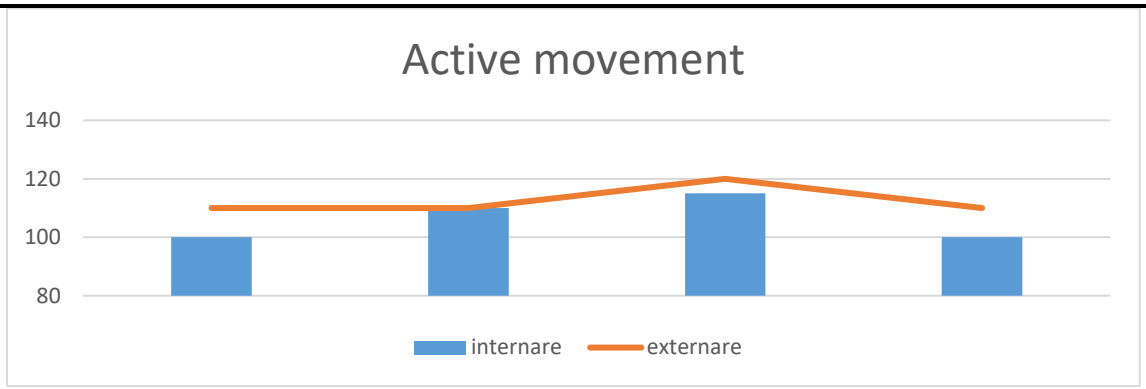

Fig 5 Right Shoulder Flexion admission-dischargement

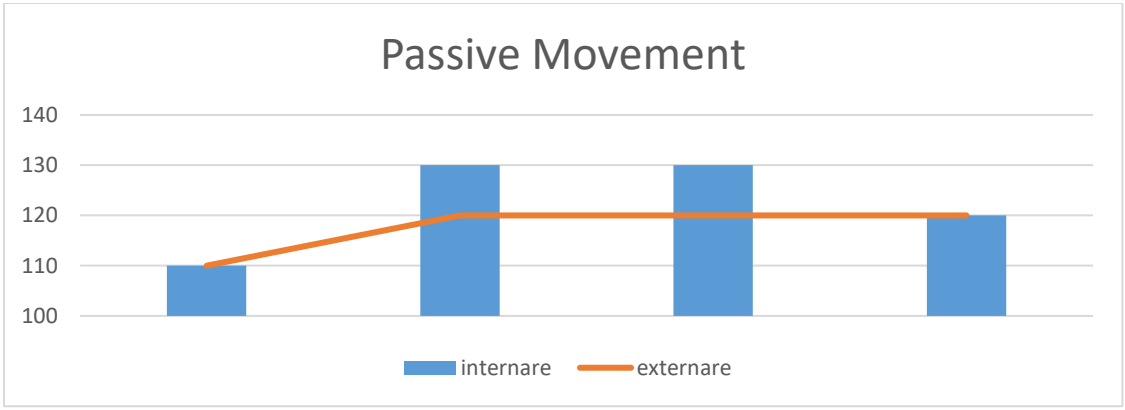

Fig 6 Left Shoulder flexion adission-dischargement passive movement

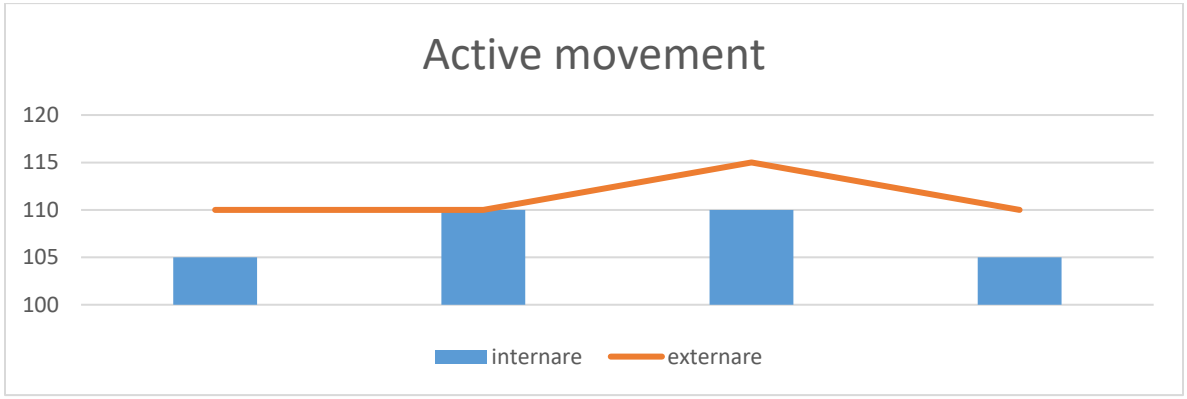

Fig 7 Left Shoulder Flexion admission-dischargement

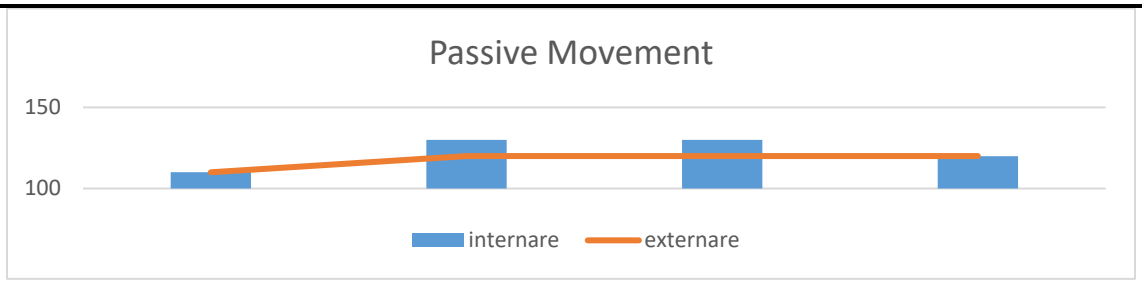

Fig 8 left Shoulder Flexion admission-dischargement passive movement

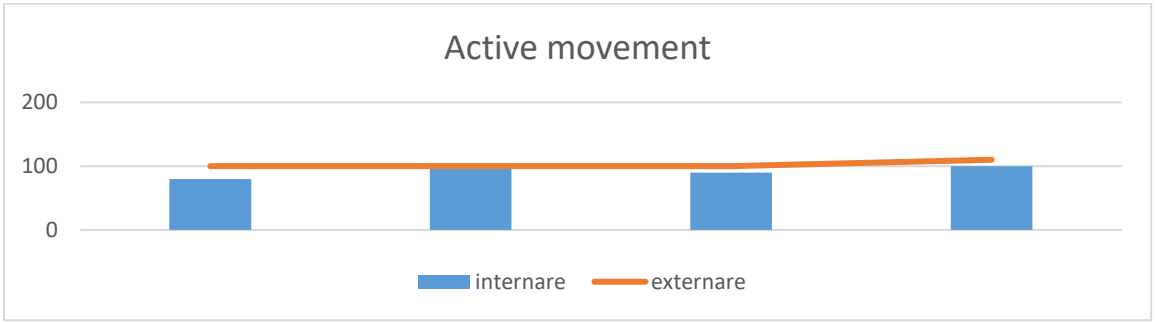

Fig 9 Right shoulder abduction admission-dischargement

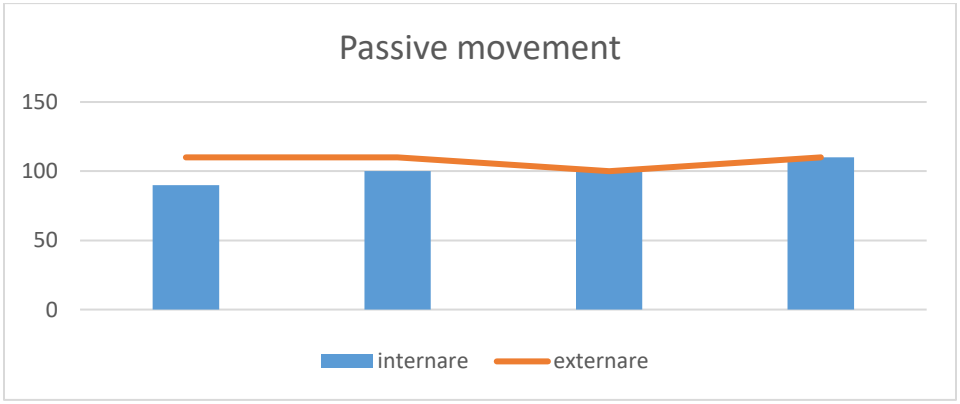

Fig 10 Right shoulder abduction admission-dischargement passive movement

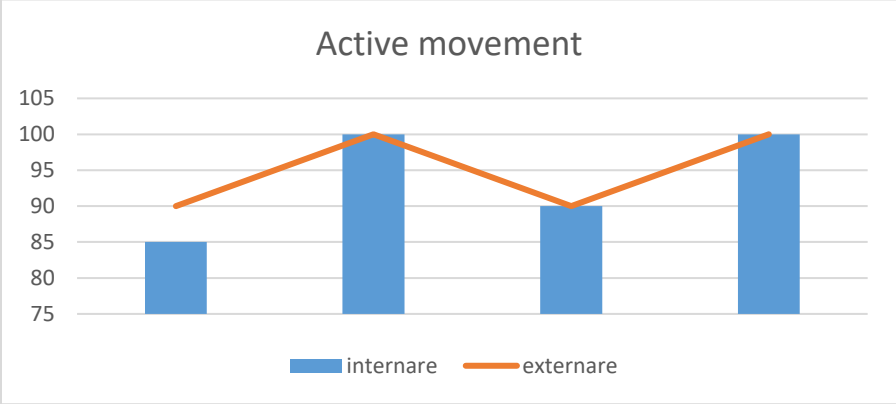

Fig 11 Left shoulder abduction admission-dischargement

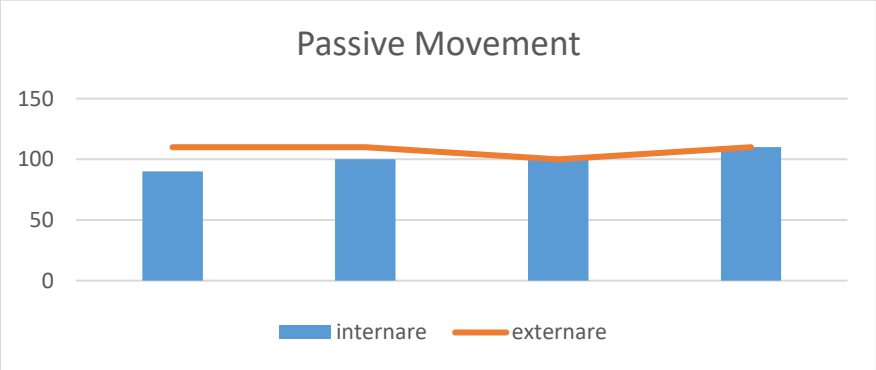

Fig12 Abduction of left shoulder admission-dischargement- passive movement

Discussions

Due to the specific configuration, athletes with a special size have a tendency to deteriorate more after they leave high-performance sports, they show a more significant degradation, as a result of the specific demands of the position they were assigned to in the team, the sequelae of some overloads on the joints, especially in the shoulder, knee, hip, spine area. (Badea D., 2012)a

At the same time, athletes with special dimensions recognize the painful sensation more difficult than other people due to the severe and very severe work regime, the particularly difficult tasks they had during the practice of sports. In this sense, we can assume that during the high-performance activity the musculoskeletal system learned a certain sensation of continuous pressure, and post-performance the athlete tolerates the pain better than an ordinary individual.

The athlete's special size (height, weight, muscle mass) represents a burden in itself for the bone system. Therefore, the athlete with a special size must maintain a certain line of sports training for the maintenance of the muscle mass which in turn constantly supports the bone system, so that the particularly large mass of the athlete does not represent an additional burden on the joints overexertion in the past during performance sports. (Badea D., 2012b)

It is particularly useful that during the free time, in the post-performance period, the athlete with a special size should maintain as much as possible the unmodified defining indices of muscle mass and adipose tissue, in order to be able to successfully cope

with the daily demands from both a physical point of view and biomechanical one. (Comfort P., 2010)

These rehabilitation treatment programs should be performed by as many athletic patients as possible. Treatments should be carried out biannually for the most beneficial effect on health, both for recovery and for improving the quality of daily life, by maintaining the optimal parameters of former athletes with special gauge. (Joyce D., 2016)

It is highly recommended that the athlete with a special size periodically monitor his health, especially from the point of view of the joints that had a special charge during the sports activity, in order to be able, through specific methods of therapy and treatment, to maintain a optimal functioning of the body as a whole.

Conclusions

According to the data obtained using the visual analog scale, the pain felt in different areas of the body was relieved to a large extent.

The most affected joints of former athletes were the knees, shoulders and coxofemoral joint, but lumbar spine conditions were also encountered.

At the end of the spa treatment, an increase in the mobility of the knee joint by 10 degrees in the plane of active flexion movement and there was also a decrease in edema and inflammation at the antero-posterior level.

At the level of the scapulohumeral joint, an increase in joint mobility was observed with 5 to 10 degrees of movement in the active flexion plane and 5 degrees of movement in the abduction plane. Also, the bicipital tendinitis encountered at the shoulder level went away after the first physiotherapy sessions.

At the level of the coxo-femoral joint, no improvement was observed in the degrees of movement and joint mobility, both passive and active, after the recovery treatment, but a decrease in joint pain could be observed.

At the level of the lumbar spine, the results could not be statistically analyzed because the Schober test remained unchanged during hospitalization, but the lumbar pain of the athletes improved considerably. The effects of the study of former sports patients demonstrated an improvement in the quality of life by decreasing joint pain and increasing mobility.

The complex balneal-physio-kinetic treatment plan was composed of salt baths with water from Lake Techirghiol, mud wraps, physiotherapy and here we can give examples of: laser therapy, electrotherapy, magnetotherapy, but also through specific kinetic exercises. This treatment plan has been very successful in treating athletic patients with special stature

References

Badea D., 2012a, Rugby strategia formativa a jucatorului, University publishing, Bucharest.

Badea D., 2012b, Rugby fundamente teoretice si metodice, University publishing, Bucharest.

Brukner and Khan, 2017, Clinical Sport Medicine, vol 1, Mcgraw Hill publishing.

Comfort P., 2010, Sport and rehabilitation injury prevention, Wiley-Blackwell publishing.

Joyce D., 2016, Sports Injury prevention and rehabilitation, Routledge publishing.