

RECOVERY OF THE TRAUMAS OF THE KNEE WITH THE HELP OF KINESIOTHERAPY - PHYSICAL EXERCISES

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ABSTRACT

This paper presents the role and importance of specific kinetic treatment in the sports injuries of the locomotors system in various martial arts styles, and emphasizes the need for individual rehabilitation programs to be developed for performance athletes.

The analysis of the obtained results highlights that the obtaining of favorable results is directly proportional to the precise application of the physical recovery and physical rehabilitation programs, as well as the seriousness of those who are directly involved in the program.

Key words: *sports training, martial arts, sports trauma.*

INTRODUCTION

Morbidity, through orthopedic - traumatological disorders, especially in recent decades, occupies a position of great importance in sports pathology. This is not a coincidence, because in order to increase the sport performance, both the volume and intensity of the effort, the training and the competitions increase. There are changes (improving, upgrading) the environmental factors in which these training and competitions take place.

At the same time, the increase in violence in sports is, unfortunately, a reality of contemporary sport, sometimes going to a certain fanaticism to be the best. This fact fully justifies the interest in sports traumatology in the field of competitive sport, which makes at least one session of the congress program at all the specialized scientific meetings, sports traumatology and the recuperation of sports injuries.

Martial Arts is a sporting area that can induce varied traumatic injuries that require a specialized medical care. In all Martial Arts, the most serious injuries occur in the gym in trainings and not in sports competitions because the concentration of athletes is lower. In addition of the problem of athletes injuries, does not matter the discipline practiced, the injuries and their effects are the same. Only the manner of the athlete injured is different.

The many forms of trauma that occur during martial arts practice are generally known, but in the literature there are no data processing related to the medical records used for the purpose of reintegration of the athlete in competition, nor data related to the means of physical medicine

used in the recovery of these athletes.

Any process and method of practicing physical exercise (bilaterally, in particular or independently) must have maximum efficiency, especially in relation to the "investments" that they assume [1]. In order to achieve this major objective, it is necessary to organize and carry out the respective process in accordance with certain norms, rules, directives which it obliges.

In today's sports and sports competitions, young people practice martial arts in an increasing number and their desire to achieve competitive sports performance as quickly as possible leads to a steady increase the number of injured athletes.

These undesirable events determine specialists to study the evolution of martial arts, the positive impact and negative consequences transposed into various traumas.

Among these injuries suffered by the athlete, characterized by suffering, time interruptions of sports activities, everyday activities, physical and psychological sequelae. That is why the athlete needs rehabilitation, efficient and fast reintegration into sports and social activity.

Rehabilitation is a form of complex medical-social assistance, but at the same time unitary in conception, which is continuously carried out and has as final goal the recovery of the deficiencies in the productive society, its means of action aiming to obtain optimal values of all four vital parameters of any individual: the morpho - functional capacity, the mental state, the vocational training and the social condition [2,3].

For a better rehabilitation of the athlete, it is possible to act by means of: medical physical recovery, psychological rehabilitation, vocational re-education and social rehabilitation.

This research is based on the premise that injuries

from a fighting sport and direct contact, as is the case with different martial arts styles, cannot be completely eliminated, but knowledge and understanding of their production can lead to the establishment of strategies training and sports behavior, recovery and reduction of trauma.

From the point of biomechanics is an acyclic-dynamic sport. Fighting takes place in two ways: "on the ground" and "standing".

The athlete needs to know "bottleneck" techniques, "articulated" techniques, "ground immobilizations" and "ground opponent design" techniques. The effort is mostly done with the locked chest (Valsava effect). The normal duration of the fight is 2 to 4 minutes, during which the techniques mentioned are used.

Marked demand of the nervous system, analyzers, and the osteoarticular apparatus is placed between neuropsychotic, neuromuscular dominant sports.

The major trauma encountered during practicing combat in the locomotor apparatus is:

- Tibial Periostasis - requires cryotherapy + analgesics, fibular zone ultrasonication, and xylin ionizations.
- Enthesis;
- Myositis;
- Quadriceps hematoma - segmental rest, local cryotherapy, surgical removal. Incorrect treatment causes calcification with adherent tissue in the muscle mass.
- Kneel or ankle cramps require immobilization
- Meniscal lesions require immobilization. The treatment consists in the release of the knee that is usually surgical, followed by a postoperative treatment for early functional recovery that can begin from the immobilization phase through active physiotherapy with specifically formulated targets.
- Fractures - require surgery, followed by postoperative recovery for functional recovery, which can start from the immobilization phase.

The aim of the research is to improve the process of functional recovery of traumatized athletes, practicing different styles of martial arts through complex strategies of trauma recovery.

The object of the research is the process of recovering the sports injuries resulting from the injuries that occurred during the training and sports competitions of different styles of martial arts.

The working hypothesis of research. Martial arts recovery strategies will help reduce the recovery period of athletes and optimize the process if:

- The theoretical and methodical bases on

applying methods and means of recovery in the training of athletes from different martial arts styles will be realized.

- The structure and content of applying the current recovery strategies will be analyzed in the training of athletes practicing different martial arts styles.

- Complex recovery strategies will be developed for athletes with various injuries of the locomotor system

- Experimentally, complex recovery strategies will be approved in the different martial arts styles.

Achieving the goal and verifying the hypothesis required the following objectives:

1. Elaboration of the theoretical and methodological bases regarding the application of methods and means of recovery in the training of athletes in different martial arts styles
2. Analysis of the structure and content of applying current strategies for the recovery of traumas in different martial arts styles.
3. Development of new, complex recovery strategies, applied to athletes with traumatic injuries of the locomotive apparatus.

Material and Method

The research methods conformed to the object and purpose:

1. Analyze specialized literature.
2. Test method.
3. Statistical and mathematical method of processing and interpreting data.

The sample of the research consisted of 15 athletes, members of the Qwan Ki Do martial arts section and the traditional Karate Classic CSA Steaua Sports Club of the STEAUA Army of Bucharest, aged between 14 and 25 years old.

In the research, the data were collected from the CSA Medical Section Steaua Sports Club of the STEAUA Army, the place where some of the kinetotherapy programs were carried out.

The experimental basis of the work is represented by the following instruments and instruments: goniometer, metal band, talimeter, scales, rigid rod, dynamometer. Also, evaluation and treatment sheets, tests, questionnaires were used.

Stages of investigation. The present research was carried out in two phases, as follows:

Phase I (2015-2016) included studying sources of literature on martial arts, trauma encountered in martial arts, classical and kinetic recovery methods,

Stage II (2016-2017) consisted in organizing research, processing and scientific interpretation of the data obtained and the whole verifying the effectiveness of the proposed experimental

methodology.

Subjects are ages 14 to 25, representing the junior and (over 18) senior years.

The 15 subjects were followed from May 2016 to April 2017 (12 calendar months) in the order of injuries.

The recording of the data was based on the events during the training and the competitions, then on the basis of the documents issued by the specialized medical services.

We watched the post-traumatic evolution of athletes by compiling them in a rigorous and complex recovery program to find the most effective treatment for the early return of athletes to competitive activity.

In the case of research, it's been observed both the performance of athletes (general physical training, specific technique) as well as the material conditions of the sports grounds and the protective equipment of the athletes.

Kinetic program for post traumatic lesions that interest soft tissues, articular tissue and bone tissue in the knee joint.

In sports medicine, any recovery program has a bipolar structure because it must contain distinctly as objectives:

1. the physical conditioning program (restoring or maintaining the general physical condition); it is divided into 4 stages (after the phases that necessarily pass any post-traumatic lesion of soft tissue).

- acute phase; sub acute phase; phase of the program of progressive exercises supervised; the rebound phase of the competition.

- for post traumatic damage of joint and bone tissue: the preoperative and postoperative stage with very well-formed kinetic programs.

2. the actual rehabilitation program (maximum recovery of the local functional deficit created by the trauma).

The tests used for the functional evaluation of the affected segments were the standard ones:

1. Manual Muscle Manual Test: The active muscle tonus was assessed by standard manual technique between 0-5.

2. Joint goniometry: The flexion angle and the extension gap with the goniometer expressed in degrees were measured.

3. Pain: He appreciated on a scale of 1-6 as follows: (without pain, rarely in vigorous activities, moderate in daily activities, for light activities, continuous)

4. Edema: Investigated the following qualitative assessment: no spontaneous joint (osteoarthritis); moderate but not hemarthrosis: moderate

osteoarthritis, with hemarthrosis; severe hemarthrosis edema with hemarthrosis.

Overall functional evaluation of the affected segment was made with LYSHOLM SCORES:

1. Instability (0-25 points)
2. Swelling (0 - 10pct.)
3. Lump / travel, walking without aids (0-5 points)
4. Locking the MI joint from G (0-15 points)
5. Pain (0-25 points)
6. Walking on stairs (0-10 points)
7. Support, your own weight while walking on flat ground (0 - 5 pct)
8. "Squatting" (flexion Mi in Article G) (0-5pct.)

Interpretation of the Lysholm score (maximum 100 pts):

Excellent > 90 pts.

Good 84-90 pct.

Moderate 65-83 pct.

"Bad" <65 pct.

Results

Evolution of LYSHOLM general score after kinetic and hydrokinetic programs is suggestive, with the proviso that during the kinetic programs two of the patients abandoned the program at certain times, lacking in tests and measurements, which has prolonged the time to return to competitive activity, and one patient declined the final tests and measurements.

It is found that: for different traumas of the locomotor system, the recovery period is longer and often difficult, suggesting the importance of trauma prevention, as well as the importance of the detailed training programs and of the other factors: equipment, sports material, appropriate sports base.

Physical therapy along with hydrotherapy and other physical procedures has a decisive importance in functional recovery treatment programs and rehabilitation after locomotor system sports injuries.

Discussions and Conclusions

The results of this study show that performance athletes require their own recovery strategy using personalized kinetic programs using the latest and most effective means of therapy and recovery, as well as a diagnosis of sportiness and sport loyalty. Traumatic prophylaxis has substantial importance and the effective ways of implementing it are: good health, psycho-emotional balance and motivation of competitive activity, superior psycho-physical training, adequate equipment, general training, specific and warm-up adapted to local conditions, sporty lifestyle, and optimal recovery after effort.

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