SJIF Impact Factor (2025): 8.688| ISI I.F. Value: 1.241| Journal DOI: 10.36713/epra2016 ISSN: 2455-7838(Online)
EPRA International Journal of Research and Development (IJRD)
Volume: 10 | Issue: 5 | May 2025 - Peer Reviewed Journal

EFFECTIVENESS OF CORVIT IN THE TREATMENT OF ANKLE JOINT INJURIES

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Article DOI: https://doi.org/10.36713/epra21886
DOI No: 10.36713/epra21886

ABSTRACT
The ankle joint is a movable articulation of the tibia, fibula and talus. It bears a large axial load. In this regard, pain syndrome and injuries in this area are quite common. Athletes often face ankle damage due to extreme loads. But problems can also arise in everyday life - a person can slip on ice, trip. The presence of injuries, dislocations, subluxations leads to loss of stability of the ankle joint.
KEYWORDS: *Injury, Ankle, Rehabilitation.*

INTRODUCTION

Damage to the ligaments of the ankle joint, stretching and overstraining the capsular-ligamentous apparatus of the ankle joint and foot is a common injury, perhaps one of the most common, received both in sports and at home. It is quite common among athletes of game sports and is not uncommon in other sports. In everyday life, it often occurs when walking on a slippery surface. The ankle joint is a powerful conglomerate in which muscle fascia, tendons and ligaments are closely intertwined. All these formations allow for coordinated activity of the joint and ensure its functionality. The capsule of the ankle joint (like other joints) consists of thousands of thin elastic fibers. In places important for the biomechanics of the joint, they form thickenings - ligaments. The system of capsule fibers, ligaments hold the joint in any physiological position of the articulating bones and prevent dislocations. The severity of the injury in question depends on the ratio of the number of damaged fibers of the ligaments and capsule and the number of those remaining intact. The severity of the injury can be judged by the intensity, size of the subcutaneous hemorrhage (bruise), severity of pain syndrome, presence of signs of hemarthrosis and synovitis (accumulation of blood or excess synovial fluid in the joint), signs of instability in the joint. Therefore, based on the individual characteristics of each person and the degree of damage to the ligaments, the recovery period after such an injury varies from 1 to 5 months. Treatment and rehabilitation for ruptured ankle ligaments requires certain efforts from the patient, the process is not the easiest.

MATERIALS AND METHODS

Stages of treatment and rehabilitation.

1. Creating conditions for the fusion of fibers and restoration of the properties of the ligaments and joint capsule. During this period, sports are prohibited, in some cases, partial or complete unloading of the leg is necessary with a bandage, orthosis, in some cases even plaster and crutches. Depending on the severity of the injury and age, this period lasts 1-6 weeks. Cold is prescribed for the first 2-3 days, analgesics locally and orally.
2. The stage is designed to relieve inflammatory post-traumatic edema, pain syndrome by performing physiotherapy and massage, local anti-inflammatory, analgesics and local warming drugs. The goal is also to prevent muscle hypotrophy and joint contracture using passive and then active exercises. At this stage, it is important to include exercise therapy in water, which very effectively increases the range of motion. However, it should be borne in mind that excessively intense and high-amplitude exercises can cause additional damage. Movements should be controlled and smooth. This period of 2-6 weeks can last longer in case of severe ruptures.
3. The stage aims to achieve full range of motion in the joint, maximum intensity of physical exercises in the gym, strengthen the muscular system with strength exercises and return to a normal lifestyle or competitive loads. It lasts up to six months after the injury. During this period, individual training is allowed, one or another method of joint support is used (orthosis, kinesio tapes). The minimum period from the date of injury to the start of training for the mildest injury is 2-3 weeks. In case of severe injuries, training is prohibited for up to 3-4 months. In any case, rehabilitation after an injury to the capsular-ligamentous apparatus of the ankle joint should take place with sufficient interaction between the patient, traumatologist, exercise therapy doctor and physiotherapist.

DISCUSSION

And the terms of rehabilitation, the beginning of training, return to full training and competitions are determined by doctors. The prototype of the Korvit support load simulator was the development for the rehabilitation of cosmonauts - a support

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unloading compensator. Main functions: modeling of support reactions using the principle of pneumomechanical pressure on the support zones of the feet in real walking modes. Formation of a powerful afferent impulse flow, which has an effect on the CNS structures, stimulating neuroplasticity processes. Modeling of a sensory image of walking in the walking cyclogram mode. Rehabilitation of motor disorders associated with a decrease or prolonged absence of support loads. Potentiation of reflex mechanisms of the step. The uniqueness of this device is that it allows simulating the indicators of physical impact on the foot during walking: the amount of pressure, time characteristics (pulse duration, intervals between impacts on the heel and metatarsal support zones of the feet and intervals between impacts on the right and left legs). Further studies have established that the mechanical impact of the support reaction force is transmitted through the nervous system and affects the activity of the cells of the brain and spinal cord. As a result, depending on the support reaction force, the systems responsible for monitoring and controlling motor activity and the muscular-articular apparatus, normalizing muscle tone, and correcting the work of the postural-tonic system are switched on or off. The Vater-Pacini corpuscles in the soles of the feet perceive the support reaction force and influence the activity of the cerebral cortex through the nervous system. Functional magnetic resonance imaging data have shown that during mechanical stimulation of the support zones of the foot in the rhythm of the step, the sensorimotor zones of the cerebral cortex responsible for the control of walking are activated in both hemispheres. Activation of these zones leads to excitation of descending corrective effects on spinal motor neurons and thereby affects the state of muscle tone. Now scientists have proven that the development of vestibular, muscular-articular and tactile senses is the foundation for the brain to master more complex functions.

RESULTS

early activation of patients with long-term immobilization. Normalization of muscle tone in the lower extremities. Indirect prevention of venous insufficiency. Non-invasive activation of the cerebral cortex areas responsible for walking. Activation of bone consolidation mechanisms in fractures. Corvit can be easily integrated into a comprehensive rehabilitation system of medical institutions of various profiles. The device is compatible with other motor rehabilitation technologies. Depending on the force of the support reaction, systems responsible for monitoring and controlling the muscular-articular apparatus and motor activity are activated. These systems normalize muscle tone, correct the work of the late-tonic system, which significantly accelerates the rehabilitation process. The simulator stimulates the supporting zones of the feet, thereby forming a powerful afferent flow, which in turn triggers neuroplasticity processes in the regulatory structures of the central nervous system responsible for movement. Different levels of difficulty during training allow motivating the patient to exceed their results, which is a key factor for the effectiveness of rehabilitation. The complex is mobile and allows the patient to actively move and perform a wide range of movements.

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