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Restoration Effect Of Pharmacopuncture In Orsopathy Of Vertebrogenic Etiology In Highly Qualified Weightlifters

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Annotation. The article contains mainly theoretical material that allows substantiating the effect of pharmacopuncture on the regenerative processes of the cartilaginous tissue of human inter vertebral discs. The mechanism of starting the process of sanogenesis and its action (based on the theory of the existence and functioning of the bio electromagnetic homeostasis of the human body) in the restoration of damaged intervertebral discs by the pharmacopuncture method is considered

Key words: pharmacopuncture, acupuncture points, acupuncture channels, reflexology, inter vertebral disc, osteochondrosis, weightlifting.

Relevance . Modern elite sport makes high demands on the training of highly qualified athletes. Active physical exercises with compression loads create prerequisites for the development of pathology of the intervertebral discs. This problem is caused by an increasing contingent of people suffering from spinal pathology. It is known that in most patients with true cartilage degeneration, acute pain becomes chronic. This group of patients is characterized by an unfavorable prognosis in terms of neurological complications, and the treatment of diseases associated with complication of cartilage degeneration of the intervertebral discs accounts for up to 80% of healthcare costs [1]. The research problem lies in the need to find ways to prevent and restore the cartilaginous tissue of the intervertebral discs, especially in athletes involved in power sports, since this group additionally experiences compression loads on the spine.

Object and methodology of research. The state and process of restoration of disc and perichondral tissues in athletes experiencing compression loads on the spine. Analysis and synthesis of scientific and methodological literature, questioning, biomedical methods.

The aim of the study is to use pharmacopuncture drugs sodium chloride 0,9% 0,1 mg 5,0 ml, lidocaine 1% 0,1 mg 5,0 ml, as well as to develop recommendations for the use of methods for the prevention of pain by means of pharmacopuncture against the background of dystrophic changes in the intervertebral discs in persons experiencing compression load on the spine.

Results and research. In a study conducted by the medical center Clinic Dr. AVIS Tashkent was attended by highly qualified weightlifters (men and women) of various weight categories . It should be noted that microcirculatory disorders underlie the pathogenesis of intervertebral disc dystrophy. Disturbances in the microcirculation system activate the process of earlier sclerosis of the endplates of the vertebral bodies (normally by the age of 30), which obliterates the small vessels that feed the nucleus pulposus of the disc [2]. In the future, the exchange of tissue fluid in the disc and peridiscal tissues is disrupted, contributing to disc fragmentation with the additional action of compressive loads. On radiographs, sclerosis of the endplates of the vertebral bodies is determined, which has no clinical manifestations at the first stage, and is a diagnostic finding [3]. In the future, compensatory reparative reactions of the body are aimed at restoring the fragmented part of the disc, but against the background of disturbances in the microcirculation system, the edema of the tissues of the spinal motion segment (SMS) further increases and the rate of regeneration decreases, forming edema and inflammation [2]. The process of destruction of the annulus fibrosus and nucleus pulposus continues actively. Against the background of edema, inflammation and thrombosis of small veins of the PDS due to hypoxia in the microcirculation system, the pathological process progresses, passing in the future a number of stages: dysfixation and compression disorders [2,4]. With continued degeneration and destruction of the nucleus pulposus and fibrous rings, fragments of the nucleus go beyond the disc with the formation of protrusion and intervertebral hernia.

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This contributes to the occurrence of neurological complications of osteochondrosis with the activation of the autoimmune aseptic-inflammatory component, forming immediate hypersensitivity reactions (HR) and delayed types [2]. The HNT reaction activates the synthesis of antibodies that form an antigen-antibody complex in the area of the hernia of the damaged spinal motion segment. The main goal of this reaction is to eliminate the released fragments of the nucleus beyond the fibrous ring. Against the background of the inflammatory process, the complement system is activated, which enhances microcirculatory reactions and promotes the release of biologically active substances (bradykinin, histamine) into the tissues of damaged spinal motion segments. These processes enhance leukocyte chemotaxis and stimulate phagocytic-fibroblastic reactions, leading to incomplete repair and destruction of the compressing factor [2]. The shown sanogenetic process leads to the elimination of nerve root compression and eliminates the presence of symptoms of neurological deficit. Based on the above, the urgency of searching for additional measures for the prevention and restoration of the musculoskeletal system is increasing. The use of pharmacopuncture, which bases its effects on exposure through tissue microsystems, accelerates repair processes, reducing inflammation, reducing pain afferentation, stimulating the elimination of the compressing factor (hernia, protrusion), and eliminates neurological complications of osteochondrosis [5]. Impact on acupuncture points is carried out through the skin. The skin is presented in the form of three components: biologically active points (BAP) (their projections), inter-point space and biological field - the space above the skin surface (it is known that part of the energy of each of the body systems is presented in the form of a field (outside the physical body) [12]. There are a large number of receptors in the BAP area (tactile bodies, terminal flasks, glomus). In the BAP microzones there are numerous nerve cells and their branches, as well as a dense network of nerve fibers and sensitive nerve thinning. It is especially necessary to note the presence a large number of mast cells in the BAP area.They contain heparin and histamine in a bound state [5].Thinning of the epidermis and looser connective tissue are determined.The BAP area, in addition to sensitive somatic apparatuses, is saturated with numerous cholinergic endings [8]. Direct response of BAP elements on the effect of pharmacopuncture is the starting point for the subsequent stages of the implementation of the therapeutic effect in the body [12]. Two main mechanisms are involved in the development of the local reaction: the axon reflex [7] and microcirculatory changes. According to modern concepts, the mechanism of the axon reflex is realized mainly without the participation of central mechanisms, with the help of neuropeptides that have a specific effect on the surrounding tissues [7], activating the metasympathetic nervous system. Activation of the metasympathetic system performs the function of stabilizing homeostasis. Considering the local microcirculatory effect at the level of the affected spinal motion segment with the formed protrusion or herniation of the intervertebral disc, microcirculatory changes are realized by stimulating leukocyte chemotaxis. This process concerns the immunoinflammatory stage of the process. The main goal of immunological reactions is to close the defect in the fibrous ring and eliminate the compressing factor [13]. A local change in the microcirculation system is realized by degranulation of mast cells with the formation and release into the microvasculature and damaged tissues of biologically active substances (bradykinin, histamine, nerve growth factor, tumor necrosis factor, interleukin, as well as activation of macrophage-fibroblast reactions [13]. This stimulates the elimination of antigen-antibody complexes in intervertebral disc herniation and activation of fibroblast reactions with the process of incomplete repair [13]. There is a formation of granulation tissue, or an ingrowth of connective tissue from neighboring structures. Thus, the mechanism of the axon-reflex to the acute stage is responsible for the reduction of pain irritation, and the mechanism of microcirculatory changes leads to the stimulation of reparative processes in the disc. Both of these processes are physiological for a person and do not have negative consequences, which is very important in sports practice when choosing a recovery method. The general response to reflexotherapy arises due to the receipt of afferent signals from peripheral receptors, which were formed during the differentiation of the germ layers into suprasegmental structures of the CNS responsible for certain segments involving a complex set of neurohumoral, vegetative and emotional reactions [15]. These effects are realized due to the construction of the unity of the innervation of the soma and viscera according to the general metameric plan. This integral response develops according to the type of adaptation reaction and homeostatic regulation, and its end result is an increase in the body's natural protective and adaptive capabilities [12]. Therefore, based on the characteristics of the pathogenesis of dystrophy and degeneration of the intervertebral discs, it can be concluded that the acupuncture method affects several links of the

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pathological process, thereby stimulating sanogenetic reactions by accelerating reparative processes. The above is dictated by the need to save the athlete from pain during cartilage degeneration, as well as to eliminate neurological complications against the background of destructive processes in the intervertebral cartilage, and to stimulate reparative processes in the disc itself. The pain syndrome is felt by the athlete for the reason that a powerful flow of irritation enters the brain from the place of painful irritation, which is formed as a result of the triggering of the mechanisms of pathogenetic processes occurring in the disc: dyscirculatory, dysfixation, compression and aseptic-inflammatory [2]. Compression and aseptic inflammation occur when the integrity of the fibrous ring is violated, and disfixation and dyscirculation occur both when the integrity of the fibrous ring is violated and when it is preserved [13]. These mechanisms are characterized, first of all, by primary damage to the cartilaginous tissue and irritation of the sinuvertebral nerve, as well as (in dystrophically altered PDS) damage to the nerve roots, which lead to neurological complications and symptoms of "neurological deficit". Strengthening and stabilization of microcirculation processes through the use of pharmacopuncture lead to the emergence of reparative processes. At the stages of dysfixation and dyscirculatory mechanisms of irritation of the sinuvertebral nerve, complete reparative processes are possible. But at the stages of compression and immunoinflammatory mechanisms of irritation of the sinuvertebral nerve, incomplete repair occurs due to the ingrowth of connective tissue from the surrounding structures [13]. The intervertebral disc is a slowly renewing tissue; therefore, reparative processes in it are completed within a year after its injury [14]. The main point of the recovery process is to reduce edema and inflammatory reactions in the disc during the acute period, as well as the elimination of the "neurological deficit" in the process of elimination and repair reactions during protrusion or herniation of the intervertebral disc. In the period of remission, stabilization of homeostasis parameters is necessary, aimed at improving adaptation to physical stress and environmental factors.

Conclusion. The expediency of using the pharmacopuncture method in athletes is to stimulate the acceleration of recovery processes in the absence of side effects and contraindications, which is important in sports practice.

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