

REVIEW ARTICLES

Osteochondrosis: pathogenetic bioregulatory opportunities of using *Discus compositum*

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Abstract

Background: Osteochondrosis is a degenerative-dystrophic disc disease, characterized by a primary lesion of the intervertebral disc cartilage and reactive changes of the adjacent vertebral bodies. As a result of deterioration in metabolic processes in the intervertebral discs there occur in them degenerative-dystrophic processes, which lead to reduction in hydrophilicity and degradation of their dampening properties. There occurs the thinning of the fibrous ring, it cracks, and the displacement of the nucleus pulposus occurs, forming an outpouching- protrusion, and at rupture of the fibrous ring – the hernia. The affection of the intervertebral disc occurs due to its repeated injuries, metabolic disorders, endocrine changes, inadequate and protracted reactions of vascular, musculoskeletal and endocrine systems to stress. In osteochondrosis and accompanying pain syndromes, a wide range of drugs is applied: nonsteroidal anti-inflammatory drugs, analgesics, anesthetics, agents that enhance blood circulation, osteotropic agents, neuromuscular relaxants, etc. However, these groups of drugs have mainly temporary symptomatic effects and do not provide the necessary pathogenetic therapy.

Conclusions: *Discus compositum* is a base complex bioregulatory drug for the treatment of osteochondrosis and its complications. It acts on the main substrate of osteochondrosis, contributing to the improvement of the elastic properties of hydrophilicity of intervertebral discs. *Discus compositum* is well tolerated, including by children, and does not cause side effects characteristic for nonsteroidal anti-inflammatory drugs. It is used both as a monotherapy and in combination with other complex bioregulatory drugs and traditional medicines, thereby increasing the effectiveness of treatment, reducing its duration, avoiding surgery.

Key words: osteochondrosis, pathogenesis, bioregulation, *Discus compositum*.

Degenerative-dystrophic diseases of the spine and joints rank first in prevalence of diseases of the musculoskeletal system [1]. Among them, osteochondrosis is one of the most topical problems. Many clinical studies of domestic and foreign experts have shown that osteochondrosis is the disease of the whole body, and accordingly, the problem is interdisciplinary, relevant both for orthopedists and neurologists, and for family general practitioners [2]. The article provides a brief overview of the clinical studies that demonstrate the relevance of applying the bioregulatory approach and complex bioregulatory drugs, among which *Discus compositum* is a base complex bioregulatory drug for the treatment of vertebral osteochondrosis and its complications [3-5].

Osteochondrosis is a degenerative-dystrophic disc disease, characterized by a primary lesion of the intervertebral disc cartilage and reactive changes of the adjacent vertebral bodies. [6] As a result of deterioration in metabolic processes in the intervertebral discs there occur in them degenerative-dystrophic processes, which lead to reduction in hydrophilicity and degradation of their dampening properties. There occurs the thinning of the fibrous ring, it cracks, and the displacement of the nucleus pulposus occurs, forming an outpouching- protrusion, and at rupture of the fibrous ring – the hernia [6, 7]. The affection of the intervertebral disc occurs due to its repeated injuries,

metabolic disorders, endocrine changes, inadequate and protracted reactions of vascular, musculoskeletal and endocrine systems to stress [6, 8].

In osteochondrosis and accompanying pain syndromes, a wide range of drugs is applied: nonsteroidal anti-inflammatory drugs, analgesics, anesthetics, agents that enhance blood circulation, osteotropic agents, neuromuscular relaxants, etc. [9]. However, these groups of drugs have mainly temporary symptomatic effects and do not provide the necessary pathogenetic therapy. Also, these drugs cause various side effects and upon long-term administration may be poorly tolerated. Similar disadvantages have the Cyclooxygenase-2 inhibitors in case of excess of their daily therapeutic dose. Also, the treatment is complicated by age restrictions and contraindications of drugs with comorbidity [9, 10]. Saturation of the body with chondroitin sulfates and glycosaminoglycans (building material) is not sufficient to restore the speed and efficiency of metabolic processes.

In this regard, the optimization of osteoarthritis therapy is topical by use of such approaches and drugs that have pathogenetic (structurally modifying) effect and can improve the efficiency and safety of the therapy, reduce the duration of drugs administration with undesirable side effects, and poorly tolerated.

One such approach, a decisive set of the above tasks is

bioregulatory. It is performed through the use of complex bioregulatory drugs [3-5]. Earlier in the literature of drugs there was used the term – antihomotoxic medications. Complex bioregulatory drugs contain ultra-low doses of the active ingredients that help to restore self-regulation and detoxification processes in the body. This in turn leads to the activation of regeneration / repair processes. An important property of complex bioregulatory drugs is the lack of pharmacokinetics, as ultra-low doses are not metabolized in the body. They do not require additional energy; do not have a pharmacological stress on the body [3-5].

Basic complex bioregulatory drug for pathogenetic therapy of osteoarthritis – Discus compositum (solution of 2.2 ml injections), contains 37 components in ultra-low doses, which act on the main substrate of osteoarthritis, contributing to the improvement of the elastic properties and hydrophilicity of intervertebral discs. The drug also has a trophic, metabolic, regenerative, analgesic, anti-inflammatory and resolving action on the ligament-tendon unit [7, 11].

The efficacy and the favorable safety profile of the complex bioregulatory drug Discus compositum is confirmed by numerous clinical studies [1, 2, 4-14].

Thus, the State University of Medicine and Pharmacy “N. Testemitanu” (Chisinau, Moldova) held a three-dimensional clinical randomized trial “Antihomotoxic therapy for lumbar pain in children and teenagers” (Savga N.G. et al, 2009). Within it there was investigated the clinical application of complex bioregulatory drug Discus compositum, Traumeel S (has an anti-inflammatory, analgesic, decongestant, immunomodulatory effect), Zeel T (has a chondroprotective, regenerative, anti-inflammatory, analgesic effect) in the complex of therapeutic measures in children with pain syndrome in the lumbar region, caused by dysplasia.

There were 524 patients under supervision aged 9-17 years with various dysplastic vertebral processes: dysplasia of intervertebral discs, arch laminae of vertebral body, fibrous rings (protrusion, disc herniation), tropism anomalies; lesion of the vertebral bodies; arthrosis of zygapophysial joints; scoliotic spinal deformation (congenital, dysplastic, post-traumatic, neurological, etc.); instability in the vertebral segments.

The intensity of pain syndrome in all patients was determined by a visual analog scale. The spinal function was investigated clinically. It was paid attention to posture, configuration of the spine, the presence and extent of its deformation, limit of the bends in one direction or another.

In order to assess the neurological status there was determined, above all, the severity of Lassegue symptom, as well as knee and Achilles reflexes.

Paraclinical examination was intended to determine the characteristics of the dysplastic process, manifested by pain syndrome. It included modern methods of instru-

mental examination: Computer tomography, 3D-computer tomography, MR-imaging, ultra-sound study of the spine, spinal thermography, laser Doppler – flowmetry and scintigraphy, histomorphological study.

An indicator of the effectiveness of the treatment was to assess the quality of life of patients. Patients were divided into two groups: I – the main group, which underwent an experimental treatment, offered by the authors of the study; II – the control group with conventional treatment. Both groups were relatively identical, with no significant differences in age, sex and the basic parameters of the disease.

The main group included 209 children who received as a course of therapy a treatment complex including antihomotoxic therapy (Discus compositum, Zeel T, Traumeel S etc., injected subcutaneously paravertebrally in the maximum pain sensitivity zone), manual and “Detenzor” – therapy.

The control group consisted of 315 children, who received traditional physio-functional treatment: modern kinetotherapy techniques, physiotherapy, physical therapy procedures, paravertebral blocks, stretching method, medication.

The results demonstrated that in the combined therapy with antihomotoxic drugs, the effect of treatment is significantly higher than that in the group of patients who underwent standard treatment. Significant improvements were confirmed by subjective indicators in patients of the main group (reduction in the intensity of pain syndrome, reduction of pain points at paravertebral palpation, disappearance of the feeling of squeezing in the spine and the tension of the back muscles, increase of range of motion in joints, sleep normalization, reduction of asthenic syndrome) have been observed immediately after the end of treatment and long-term periods.

It has been found that the use of complex antihomotoxic medications as basic medication provides a single organ-tissue therapeutic component, which is performed at the level of the bone, muscle and cartilage structures of the spinal column. Discus compositum, Zeel T, Traumeel S were included in the treatment complex of dysplastic process of the spinal column due to their pronounced well-known properties (anti-inflammatory, antiedemic, analgesic, chondroprotective and hondrostimulatory etc.). These drugs have a therapeutic effect on the entire spectrum of disorders (degenerative, trophic, immune, etc.), characteristic to the dysplastic process. Moreover, the above-mentioned antihomotoxic drugs practically do not cause allergic reactions, side effects and are well tolerated by children. Due to this, antihomotoxic drugs allow receiving a pronounced clinical effect and are comparable to traditional medical treatment [14].

For drugs an important characteristic is also the safety profile, especially for patients with concomitant diseases,

pregnant and breastfeeding women, children. In the clinical study “Therapeutic effect of homeo-siniatry in patients with combined pathology of the spine and of the digestive system” (Komlevf N.E. et. al, 2005) there was investigated the effectiveness of complex bioregulatory drugs both in relation to osteochondrosis and their impact on associated diseases of the digestive tract. The patients of the main group were injected with Discus compositum, Traumeel S and other complex bioregulatory drugs, and in the control group, patients received conventional treatment (nonsteroidal anti-inflammatory drugs, etc.). Results: in the main group there was a significant and stable positive dynamics, both of osteochondrosis, and of digestive system (confirmed by Gastroscopy). The patients of the control group did not reach the desired effect in the treatment of osteochondrosis and in gastro-intestinal tract was registered a slight deterioration [13].

In the clinical study “Herniated intervertebral disc of the lumbar spine and their biological therapy” (Rolik I.S. et al, 1999) there was investigated the therapeutic efficacy of complex bioregulatory drugs Discus compositum and Traumeel S (elimination of circulatory disorders in the disc, the stimulation of repair processes) at osteochondrosis of spine, complicated with intervertebral hernia and protrusions. The patients of the main group were treated with complex bioregulatory drugs, and of the control group – with traditional drugs. As a result of a year-long cycle of treatment, according to the instrumental examinations, a more pronounced regression of pathological changes of the spine was found in the main group. Conclusion – the use of complex bioregulatory drugs in the treatment of os-

teochondrosis complicated by herniated disc and protrusions is highly effective, the drugs have a high safety profile, and their use is economically feasible and advantageous in comparison with other methods of treatment, including the cost of treatment of side effects from the use of traditional medicines. It is noted that complex bioregulatory drugs therapy allows delaying or in many cases, avoiding surgery [7].

Ukrainian colleagues from the Lviv National Medical University “D. Galitsky” (Jackiewicz J.E. et al., 2005) have developed guidelines of Ministry of Health of Ukraine “Pathogenetically directed drug therapy of destructive-dystrophic diseases of the spine and joints”. They describe the range of modern treatment methods and drugs used for diseases of the joints and spine, including osteochondrosis. Recommendations are made on the use of Discus compositum, Traumeel S, Zeel T, which make it possible to significantly improve the results of treatment, reduce the dosage of some allopathic remedies, and in some cases, cancel them [12].

An important pathogenetic mechanism of aggravation of vertebral osteochondrosis is aseptic inflammation of connective tissue formations in the area of degenerative-dystrophically changed spine area. Local inflammation process causes tissue swelling and additional compression of spinal roots, which clinically is manifested by long and persistent pain syndrome and a positive symptom of “cough impulse”. Currently, the most informative indicator describing the presence and intensity of inflammation is the concentration of C-reactive protein of blood serum. Increase in osteochondrosis of level of C-reactive protein up to 3-7

Table 1

Recommendations for use of complex bioregulatory drugs in osteochondrosis

	Acute and subacute period	Completion of the course of treatment (3-6 weeks or more)
Basic complex bioregulatory drug in osteochondrosis		
Discus compositum	2.2 ml i/m, s/c, i/c every other day No 5	then 2 times/week No 5-10
For C-reactive protein 3-7 mg/L to add in the scheme:		
+ Traumeel S	2.2 ml i/m, s/c, i/c every day No 3-5	then 1 tablet 3 times/day (until C-reactive protein is reduced below mg/L)
	ointment: easily embrocate / apply a bandage on the area of affected segment on the first day – 5-6 times, then 3 times / day	ointment: easily embrocate 2-3 times/day, including massage; or daily administer phonophoresis No 10
For spondyloarthritis to add in the scheme:		
+ Zeel T	2 ml i/m, s/c, i/c every other day No 5	1 tablet sublingual 3 times/day
	ointment: apply on the skin on the area of affected joints up to 5 times/day	ointment: apply on the skin on the area of affected joints 2-3 times/day

An anti-relapsing treatment course in osteochondrosis is recommended twice a year.

mg/L indicates a local inflammation and serves a criterion to be included in the treatment regimen with the complex regulatory drug Traumeel S [17]. Intramuscularly or by biopuncture daily 3-5 days Traumeel S is administered in combination with Discus compositum. After that, a transition is made to Traumeel S in the form of tablets. Criterion for stopping taking the tablets Traumeel S is the reduction in C-reactive protein levels below 3 mg/L (table 1.) [17].

The studies have shown an increase of effectiveness of therapy of osteochondrosis with a combination of injected complex bioregulatory drugs Traumeel S and Zeel T with ointment and tablet forms of these drugs. At the beginning of treatment (acute phase / aggravation) for course of injection, it is recommended to use locally the ointment Traumeel S and Zeel T. With the purpose of prolonging and consolidating the effect of treatment, achieving a more long-term remission after a course of injections (on out-patient stage) it should not less than 3-6 weeks continue applying ointments Traumeel S and / or Zeel T in combination with the tablet forms of the complex bioregulatory drugs [12, 14]. Recommended dosages of complex bioregulatory drugs in combined use are listed in table 1.

Conclusions

Discus compositum is a base complex bioregulatory drug for the treatment of osteochondrosis and its complications. It acts on the main substrate of osteochondrosis, contributing to the improvement of the elastic properties of hydrophilicity of intervertebral discs. Discus compositum is well tolerated, including by children, and does not cause side effects characteristic for nonsteroidal anti-inflammatory drugs. It is used both as a monotherapy and in combination with other complex bioregulatory drugs and traditional medicines, thereby increasing the effectiveness of treatment, reducing its duration, avoiding surgery (!) [1,2,6-16].

References

1. Fischenko YaV. Discus compositum and Zeel T in the treatment of lumbar spondyloarthrosis. *Biological Therapy*. 2012;(3-4):24-26.
2. Belov VV, Eremeev YuV, Kravchuk OA. Reflexotherapy combined with homeosinaty of drugs Discus compositum and Traumeel S in complex treatment of pain syndromes of lumbar osteochondrosis. *Biological Therapy*. 2003;(3):46-48.
3. Klimenko VG. The main provisions of the pathogenetic bioregulatory approach in general therapeutic practice. *Biological Therapy*. 2013;(1):8-11.
4. Heine H. Importance of antihomotoxic therapy in regulatory medicine. *Biological Medicine*. 2004;(2):4-9.
5. Van Brunt B, Heine H. Regulatory blockade: definition, importance and therapy. *Biological Medicine*. 2006;(2):4-5.
6. Kadina LZ, Kadin IM. The use of antihomotoxic medications in conjunction with classical acupuncture for the treatment of neurological manifestations of osteochondrosis. *Biological Therapy*. 2003(4):46-48.
7. Rolik IS, Galanov VP. Hernias of intervertebral discs and their biological therapy. *Biological Medicine*. 1999;(1):22-31.
8. Rummyantseva GM, Yakovenko AM, Levina AM, et al. The effectiveness of treatment of neurosis-like disorders in osteochondrosis of the cervical spine with drugs of Heel company. *Biological Medicine*. 1997;(2):46-52.
9. Putilina NE, Agasarov LG. Discus compositum in complex treatment of vertebral lumbar pain syndromes. *Biological Medicine*. 2000;(1):32-34.
10. Averyanov EV. Bioregulatory approach in the treatment of degenerative-dystrophic diseases of the musculoskeletal system. *Biological Therapy*. 2012;(3-4):8-13.
11. Vakulenko LA. Experience of using the biopuncture techniques in the treatment of degenerative- dystrophic diseases of the musculoskeletal system. *Biological Therapy*. 2012;(3-4):37-40.
12. Jackiewicz YaE, Jackiewicz AY, Telishevsky YuG, et al. Pathogenetically directed drug therapy of destructive-dystrophic diseases of the spine and joints. Guidelines of the Ministry of Health of Ukraine. 2005; 25.
13. Komleva NE, Maryanovsky AA. Therapeutic effect of homeosinaty in patients with combined pathology of the spine and digestive organs. *Biological Medicine*. 2005;(1):29-33.
14. Savga NG, Savga NN. Antihomotoxic therapy in lumbar pain in children and teenagers. *Biological Therapy*. 2009;(4):30-35.
15. Dumin PV, Furman NV, Semenov AI. Use of antihomotoxic drugs Traumeel S, Zeel T and Discus compositum in the complex treatment of patients with hernias of intervertebral discs. *Biological Therapy*. 2000;(1):3-6.
16. Motsar SI, Ignatiev EO. Experience of using antihomotoxic drugs Traumeel S, Zeel T and Discus compositum in the treatment of deforming arthrosis, osteochondrosis and spondylarthritis. *Biological Therapy*. 2000;(2):34-42.
17. Pashchenko VN, Girin SV. The diagnostic role of C-reactive protein in modern clinical practice. *Biological Therapy*. 2010;(1):10-14.