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## **The biopuncture in dorsopathy**

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### **Abstract**

The article summarizes the results of our own scientific and practical research on biopuncture (or pharmacopuncture) – local stimulation of acupuncture points with small doses of drugs or other agents. The "object" of the work was dorsopathies at the lumbosacral level, the choice of which was explained by the widest coverage of the population, the protracted course and the severity of the consequences. In the course of the research, the addition and even potentiation of the reflex and drug links of the method under consideration was noted. In particular, favorable changes in the status of patients observed against the background of biopuncture by complex agents were accompanied by a significant improvement in the results of psychological and electrophysiological examination. In a series of studies on biopuncture with Alflutop, a significant superiority of this approach over the compared methods was manifested, in addition to clinical effects, in structurally-modifying changes in the intervertebral discs. Using the same drug, an original scheme of therapeutic action was proposed, combining the techniques of drug blockade and pharmacopuncture. Special attention should be paid to the fact that the effectiveness of biopuncture is enhanced due to the combined use of modern hardware techniques. In a series of separate studies, the efficacy of biopuncture with essential oils in dorsopathies was confirmed, largely explained by the cumulative effects.

**Key words:** dorsopathies, biopuncture, local drug stimulation, essential oils stimulation.

The article summarizes the results of our own scientific and practical research in the field of biopuncture – local stimulation of acupuncture points with small doses of drugs or other agents.<sup>1,2</sup> In 2002, for the first time in the country, the textbook "Pharmacopuncture" was presented, which was republished several times until 2015.<sup>3</sup> A series of studies that reveal the mechanisms, efficacy and therapeutic reliability of the method are devoted to this topic. The object of the work was dorsopathies at the lumbosacral level, which are characterized by the widest coverage of the population, a protracted course and the severity of consequences, including disability of patients.<sup>2-4</sup> The choice of this pathology was also associated with the stages of the formation of reflexology, the methods of which were largely honed on the "model" of neurological pain syndromes.<sup>1</sup>

Methodically, in the case of the use of medications, manipulations consist of subcutaneous and/or intradermal injection of a drug substance in the amount of 0.2-0.3 ml for each locus.<sup>3,4</sup> The mechanisms of action of the method include the prolongation of the reflex response due to changes in the volume characteristics of tissues in the area of points and the formation of multiple depots of stimuli.

However, the question of the specificity of the action of drugs and, especially, the possible interaction with acupuncture points remains unclear. Thus, the comparability of the results in response to the injection of the antioxidant Actovegin or saline solution in carpal neuropathies of the hands still testified in favor of the prevalence of the reflex over the actual drug effect.<sup>5</sup> On the other hand, the use of pharmacopuncture drugs of various classes in dorsopathies is highly effective, superior to the methods compared, accompanied by the summation of the main therapeutic links.<sup>6-9</sup>

## **Results**

Initial research in this direction was carried out with the help of complex homeopathic preparations of the Heel (Germany). Over the course of the first study,<sup>10</sup> the efficacy of the drug Discus compositum was evaluated, the choice of which was determined by the composition that even determines the pathogenetic effect. A total of 90 patients with exacerbation of lumbosacral dorsopathy were divided into three randomized groups that received basic therapy, with exposure limited to it in group 1. Along with this, the other two groups used the desired drug: in group 2 intramuscularly, in group 3 – by pharmacopuncture. The analysis performed at the end of

therapy confirmed the significant advantage of pharmacopuncture, which is also manifested in the earlier terms of achieving an analgesic effect. In this case, the favorable changes in the neurological status of patients were accompanied by a significant improvement in the results of psychological testing, thermograms, and somatosensory evoked potentials.

Generally comparable results were obtained during pharmacopuncture with *Placenta compositum*, which differs in vascular influence.<sup>6</sup> 90 patients with lumbar dorsopathy, with the leading neurovascular component, were randomly divided into three groups in which standard treatment was carried out. In addition, the drug was used in the first two groups: in the 1st group by pharmacopuncture, in the 2nd group – intramuscularly. In group 3, pharmacopuncture was performed with saline, *i.e.*, in a placebo format. As a result, a reliable advantage of true pharmacopuncture was confirmed, with the use of the drug, verified by vascular analysis (rheovase and Doppler sonography).

During the following study,<sup>7</sup> in order to correct lumbar vertebral manifestations, the drug Cell T, indicated for pathology of the musculoskeletal system, was used. The 120 patients with dorsopathy at the lumbosacral level were divided into three groups in which conventional treatment was background. In addition, the selected drug was used: in the 1st group by pharmacopuncture, in the 2nd group by electrophoresis. In the 3rd control group, Cell T was administered intramuscularly. As a result, only in the first two groups there was a regression of clinical manifestations, but with intergroup differences. Thus, in the course of pharmacopuncture, the reduction of radicular symptoms was more significant, and electrophoresis was more significant in the reduction of myodystonic disorders, which was confirmed by the data of objective analysis, including electromyography.

The same drug was used in a follow-up study.<sup>8</sup> Patients with lumbosacral dorsopathy were divided into four randomized groups, in which various techniques for administering certain agents were used along with standard treatment. In the first two groups, intramuscular injections of Cell T or saline (as a placebo) were selectively performed. In the other two groups, these substances were injected into the points of reflexology, and saline injections were considered as a complicated version of the placebo. As a result, it was shown that only pharmacopuncture Cell T provided potentiation of reflex and drug effects, ultimately determining the effectiveness and reliability of the technology. On the contrary, with similar use of saline, the instability of previously achieved satisfactory indicators was noted. The revealed differences in clinical characteristics were verified by the results of psychological and electrophysiological analysis, including the method of somatosensory evoked potentials.

Work was also carried out on the use of pharmacopuncture with Traumeel S and extracorporeal Shock Wave Therapy (SWT) in lumbosacral dorsopathy.<sup>11</sup> The observed 90 patients with dorsopathy were randomly divided into three treatment groups, in which medication and orthopedic care was prescribed as the baseline. At the same time, SWT was performed in the 1st group, pharmacopuncture with Traumeel S was performed in the 2nd group, and a complex of these methods was used in the 3rd and main groups. As a result, it has been proven that a combination of therapeutic approaches provides more significant results in comparison with their separate use. At the same time, the positive effect of pharmacopuncture in leveling the undesirable primary effects of the acoustic shock wave has also been demonstrated. Along with the above, work was carried out to assess the effectiveness and reliability of pharmacopuncture performed by the drug Alflutop (Biotechnos, Romania) as a representative of classical medicines.

In the first study, 110 patients with lumbosacral dorsopathy, with a leading vascular component, were assigned to three randomized groups.<sup>4</sup> In addition to the basic therapy, in the first two groups, the drug was administered intramuscularly: in the 1st group alone, in the 2nd group in combination with classical acupuncture, *i.e.*, in the form of a labor-intensive complex. In group 3, the basic treatment was supplemented with pharmacopuncture with this drug. And here a significant therapeutic advantage of both the complex and pharmacopuncture over the intramuscular use of the drug was established, which was confirmed by the results of an objective analysis.

In furtherance of the data obtained, the efficacy of combining the pharmacopuncture Alflutop with zonal low-frequency Electromagnetic Stimulation (ES) was analyzed.<sup>9</sup> Patients with exacerbation of lumbosacral dorsopathy were divided into four randomized groups, in which standard treatment was carried out, and in group 4 (control) it was the main one. Along with it, ES was used in the 1st group, Alflutop pharmacopuncture in the 2nd group, and a combination of these methods in the 3rd group. In the course of the study, it was demonstrated that the proposed complex provided a clear improvement in clinical and instrumental characteristics, significantly superior to the indicators of the compared groups. In this regard, the positive structural-modifying effect on vertebral tissues, namely the intervertebral discs, was fundamentally significant.

We have also proposed an original treatment scheme that combines the techniques of drug blockade and pharmacopuncture with Alflutop.<sup>12</sup> 90 patients with exacerbation of dorsopathy at the lumbosacral level were randomly assigned to three groups, with conventional treatment as the baseline. The effect in group 1 was limited to it, and in the other two, local drug stimulation

was additionally carried out. In particular, 12-14 points were selected along the middle and lateral lines of the back (forming a kind of "lattice" from the traces of injections) and 6-8 acupuncture points of the lower extremities. At the same time, lidocaine was injected intradermally in the "lattice" area at a dosage of 0.1 ml per locus, while various agents were injected subcutaneously into the projection of the points of the lower legs and feet: in group 2 – Alflutop, in group 3 – saline, as a placebo.

The reverse dynamics of the indicators indicated the advantage of both options of local stimulation, confirmed by the improvement of the patient's condition within 60% of the cases - against 46.6% of cases in response to the generally accepted exposure. However, in the result groups themselves, with comparable rates of pain reduction, their level by the end of therapy was significantly lower in the case of pharmacopuncture with the drug. The noted difference can be explained by the points of application of the medications used. In particular, segmental blockade with the anesthetic Lidocaine determines the achievement of a rapid analgesic effect, while pharmacopuncture with Alflutop provides maximum final effectiveness.

In the light of the information presented, the dermal use of essential oils seems to be an offshoot of biopuncture. Local medicinal and aromatic stimulation are indeed united by the performance of the latter by agents that are close to drugs in a number of properties. The differences relate to the area and depth of impact, which determine the volume and accuracy of information delivery. In a comparative aspect, based on the positions of low-energy exposure, the point variant can presumably be therapeutically more effective. This approach was tested in a study.<sup>13</sup>

Patients under observation with prolonged exacerbation of lumbosacral dorsopathy were divided into three groups, in which conventional treatment was carried out. In addition, the first two groups used a 1% mixture of essential oils recommended for dorsopathies<sup>14</sup> in the form of a combination of derivatives of St. John's wort, lavender, cayuput, and marjoram. The composition in the 1st comparison group was used by massage manipulations, in the 2nd, main group – by biopuncture. In the 3rd control group, camphor, indifferent oil, which had no therapeutic effect, was used as a placebo. The treatment in all groups consisted of 10 alternating manipulations every other day.

As a result, the effectiveness of both forms of using essential oils was confirmed, with an improvement in the condition in 59% and 63.3% of cases - against 48% in the control group. However, the rates of sustained analgesia achieved after an average of 6 procedures in group 1 and group 5.2 in group 2 differed in the study groups. In a similar ratio, the intensity of pain decreased by 53% and 60%, respectively. After six months, recurrences of dorsopathy in the control group were noted in a third of patients, while in the case of the use of essential oils, they

were traced in smaller quantities. However, there are differences in the severity of the resulting algias: in the 2nd group they increased insignificantly, while in the others to a greater extent, and in the control group they increased significantly. In addition, vascular examination data showed greater stability of results in the case of biopuncture with essential oils. The differences thus identified may be due to the cumulative effect.<sup>15-17</sup>

## **Conclusions**

The efficacy and therapeutic reliability of biopuncture performed for lumbosacral dorsopathies with drugs of various registries – complex homeopathic and classical medicines, as well as essential oils – has been confirmed. Particular attention should be paid to the fact that the effectiveness of biopuncture is enhanced due to the parallel use of hardware techniques, opening up another scientific and practical direction.

At the same time, the differences in the effects achieved in a number of works, associated with the peculiarities of the techniques used, open up the possibility of individualizing their purpose.

## **List of acronyms**

SWT, Shock Wave Therapy

ES, Electromagnetic Stimulation

## **Contributions of Authors**

LGA, OYK, TEB, AVN, AAM, MVB, LRV – development of the study design, data design, writing, review of publications on the topic of the article, data interpretation, statistical processing of data, data interpretation, supervision of the article; LGA, IAG, AVN, AAM, MVB, LRV - drafting the paper, revision of the article; LGA, AAM, MVB, LRV, DVF – development of the study design, data design, writing, review of publications on the topic of the article, data interpretation, supervision of the article, LGA, EPI – supervision of the article.

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## **Conflict of Interest**

The authors declare they have no conflicts of interest.

## **Ethics approval**

The Ethics Committee of the National Medical Research Center for Rehabilitation and Balneology of the Ministry of Health of Russia approved this study. All research is carried out in accordance with the 1964 Declaration of Helsinki, revised in 2013, on human and animal rights. Informed consent: Signed by all patients participating in the study. Written informed consent was also obtained from a legally authorized representative(s) to publish anonymized information about the patient in this article.

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