

Segmental bioelectronic functional diagnostics for
spondylogenic dorsalgia
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Spondylogenic dorsalgias occur in 70–90% of the adult population and are one of the most common causes of temporary disability. Episodes of back pain develop annually in half of the working-age population, with persons aged 35–55 years being most often affected (Kamchatnoe PR). According to the WHO experts, dorsalgia at the end of the 20th century acquired the character of a non-infectious epidemic, since about 80% of the population suffer from it during their lifetime. There is a tendency to an increase in the frequency of pain episodes in the back.

Dorsalgia is a pain syndrome in the back caused by functional and dystrophic changes in the tissues of the musculoskeletal system (facet joints, intervertebral disc, fascia, tendons, ligaments) with possible involvement of adjacent structures (root, nerve) (Borenstein D., 2000). The most common are the combined forms of pain syndromes: muscular-tonic, neurodystrophic, neurovascular. Pain in muscular-tonic syndromes is caused by the reaction of the root involved in the state of compression and ischemia at the level of the spasmodic muscle. Further, a neurodystrophic form of lumboschialgia is formed with morphological changes in local tissues like neuroosteofibrosis (trigger zones). The neurovascular form occurs with vasospastic,

Determining the nature of the pain syndrome is of great importance. Acute pains have the character of a direct protective and protective reaction, develop sharply as a result of damage to nociceptive receptor fields. As a rule, muscle-tonic disorders predominate, without degenerative-dystrophic changes in the tissues of the musculoskeletal system. Therapy in the case of acute pain syndrome consists in stopping the action of the traumatic factor, blocking pain impulses, and relieving inflammation. The syndrome of chronic pain is considered as a chronic persistence of pathological arousal in the structures of the central nervous system without significant triggering

'nociceptors. The developing degenerative-dystrophic disorders are more of an accompanying nature, their condition is not decisive in the formation of pain syndrome. In this case, therapy is mainly aimed at increasing the threshold of pain perception, increasing the reserves of the emotional sphere, reducing stagnant tension in the structures of the central nervous system.

The cause and nature of the pain syndrome is established on the basis of a somatic, neurological, manual, orthopedic examination. The methods of objectifying the process are X-ray studies, computed tomography (CT) and magnetic resonance imaging (MRI). The expansion of the instrumental spectrum is currently the methods of visualization of the microvasculature, in the basins of interested

great vessels, study of the functions of maintaining an upright posture in the framework of stabilometry programs. Of great interest are prenosological criteria for a device-free study, allowing to determine static-dynamic and lymphodynamic disorders in the form of retrograde lymph flow, leading to disruption of neuro-immune endocrine processes underlying diseases of the musculoskeletal system and somatoform disorders (Safonicheva O.G., Kuznetsova O.V. , 1996).

Given the current trend towards the use of non-invasive, environmentally sound and informative research and treatment methods, nowadays more importance is attached to methods of diagnosis and treatment using low-frequency (Ananyin N.N., 2001; Levitsky E.F., 2000), low-intensity (Miryutova N.F., 2003) electromagnetic influences.

In our opinion, the method of segmental bioelectronic functional diagnostics (SBFD) on the hardware and software complex "IMEDIS-EXPERT" (Center "IMEDIS", Moscow) possesses sufficient diagnostic informational content, in our opinion. As a material for the study, the reaction of the skin exteroceptor zones is used, which is a reflection dynamic changes in the regulation of the internal environment of the body.

The SBPD technique uses the principle of segmental innervation of internal organs, according to the zones discovered by the British neurobiologist Henry Head (1861-1940) and consists in the removal and processing of indicators from biologically active zones of the feet, palms, head.

The mechanism of information and functional connections between certain biologically active zones of the skin and internal systems and organs due to cortical-visceral, viscerovisceral, viscerocutaneous interactions and the influence of psychoemotional states makes it possible to evaluate biochemical, bioelectric and other processes using electrical signals coming to these zones.

SBPD reflects the idea of the functioning of the body and its individual parts, through time-dependent graphic functions and coefficients, as well as deviations from the norm in the functions of regulation in response to dosed irritations, which undoubtedly reflects the concept of considering premorbid and the formation of morbid states as a mobile process of maintaining or "disruption" of adaptive self-regulation by reducing the adaptive capabilities of the organism (RM Baevsky, AP Berseneva, 1997). To assess the adaptive capabilities of the organism, the following classification of functional states was used:

Norm - class of functional states with sufficient functional (adaptive) capabilities of the body for an adequate response to the impact of environmental factors.

Disruption of adaptation is a condition with a sharp decrease in the functional capabilities of the body due to a violation of compensation mechanisms. In this condition, as a rule, various diseases are observed in the stage of subcompensation or decompensation.

Pre-nosological (transient) states are states of ensuring the functional capabilities of the body due to a higher voltage of regulatory systems. Allocate the stage of nonspecific changes from the side

organs and systems and the stage of specific changes, which are compensated by overstrain of regulatory mechanisms, which subsequently leads to a state of exhaustion and failure of adaptation.

The main advantage of the method of segmental bioelectronic functional diagnostics is the ability to assess the total potential of cells of functionally significant viscerosomatic associations, which contributes to the implementation of the concept of a multilevel approach to diagnosis.

Purpose of work: to study the parameters of SBPD in dorsalgia, to determine the possibilities of SBPD for the diagnosis and monitoring of the condition of patients with back pain.

Tasks:

1. To study the possibilities of SBPD in the study of the condition of patients with dorsalgias.
2. Determine the most effective SBS slices.
3. Conduct a study of patients with acute and chronic dorsalgias and to identify the criteria of SBPD in different types of pain.
4. Investigate the dynamics of SBPD after applying low-frequency low-intensity pulsed electric fields.
5. Determine the place of SBPD in the clinic of nervous diseases.

We studied the parameters of SBPD in 50 patients with dorsalgia. The most indicative were sections of SBPD "potential target organs", "analysis of segmental innervation", "vertebrogenic diagnostics". During the initial study, not a single patient in the zone of pain irradiation had normergy indices. The first group consisted of 26 patients who had a state of hyperergy, while the nature of the pain syndrome reflected the state of inflammation, there were main complaints of acute pain, aggravated by movement, physical activity, decreasing at rest from analgesics, nonsteroidal anti-inflammatory drugs (NSAIDs). On objective examination in the area of painful irritation, edema, painful tissue tension, antalgic posture. When examined on radiographs, CT, MRI, signs of degenerative changes are insignificant.

In 24 patients, representing the second group, signs of hypoergy were found on FBS in the area of the lumbar spine. At the same time, all patients complained of aching, breaking, pulling, and cerebral pains, mainly at rest, at night, sleep disturbance, decreased mood, appetite, dysfunction of the abdominal organs by the type of insufficiently satisfactory act of defecation, peristaltic noises, etc. The effect of the use of analgesics, NSAIDs is insignificant. In a number of cases, there were vegetative disorders in the form of dystrophic changes in the skin in the pelvic area and lower extremities. X-ray, CT, MRI showed signs of degenerative destructive disorders in the lumbar spine.

All patients underwent low-frequency low-intensity electromagnetic influence with individually selected frequencies using the device of bioresonance therapy "IMEDIS-EXPERT" in courses of 4 sessions with an interval of 2 to 7 days. During therapy and in the follow-up, the patient's condition was monitored. In a larger number - 47 cases after 1-3

sessions managed to bring the patient into a state of adaptation, or into a state of increased adaptation with the help of adaptive bioresonance therapy with obtaining a picture of normergy or hyperergy. However, some patients after the course of therapy are not withdrawn from the state of hypoergy.

Conclusions:

1. The state of adaptation as a mobile process in response to dosed irritant, can be investigated using segmental bioelectronic functional diagnostics.

2. The most optimal for studying are potential target organs, segmental analysis vertebrogenic diagnostics, which make it possible to determine the state of adaptation of the studied zones, namely, the musculoskeletal system (ODA).

SBS slices:
diagnostics,

3. When studying the sections of the SBPD, the type of response is determined: normergy, hyperergy, hypoergy in the area of the studied department of the ODA. In the case of acute dorsalgia, the type of response according to SBPD is defined as hyperergy. In the case of chronic dorsalgia, the type of response according to SBPD is defined as hypoergy.

4. When using low-intensity pulsed low-frequency electrical influences, adaptive self-regulation occurs, reflected in the picture of the positive dynamics of SBPD in all types of dorsalgias.

5. The data obtained allow us to objectify the state patients with acute and chronic back pain and optimize the individual strategy and tactics of treatment.

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