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LUMBAR PAIN: CLINICAL ASPECTS OF DIAGNOSIS AND TREATMENT

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ABOUT ARTICLE

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Abstract: Pain is an unpleasant sensory and emotional experience caused by existing or potential damage, described in terms of such damage. Pain is an important adaptive reaction of the body, serving as an alarm signal. However, if pain becomes chronic, it loses its physiological significance and is considered pathological. Acute pain appears when exposed to intense mechanical, thermal or chemical stimuli, lasts a short time and is clearly localized within the affected motor segment.

INTRODUCTION

Lumbar pain with or without irradiation to the leg (low back pain) - symptoms most often encountered in the pain practice of doctors of various specialties: neurologists, orthopedic traumatologists, rheumatologists, family and local therapists, physio- and reflexologists, etc. Back pain - This is a problem that involves neurological, orthopedic, traumatological and rheumatological aspects.

According to statistics, 30-60% of the population of developed countries suffer from recurrent back pain. 75% of patients with back pain seek help from 2-3 specialists or more, but do not always achieve pain relief. About 80% of all back pain is lumbar, which can affect all age groups, but the peak incidence occurs between the ages of 30 and 60 years. According to WHO experts, every person has experienced lower back pain at least once in their life. Back pain is the second most common reason for visiting a doctor after respiratory diseases and the third most common reason for hospitalization.

Low back pain syndrome refers to pain localized between the 12th pair of ribs and the gluteal folds.

Causes:

Low back pain (LBP) is a nonspecific symptom that can have many causes. The 20th century made serious adjustments to the understanding of the etiology and pathogenesis of lumbar pain. Initially, the main cause of their occurrence was considered to be inflammation of the nerve roots and trunks, which was reflected in the term “lumbosacral radiculitis.” Even 20-30 years ago, radiculitis was treated with large doses of antibiotics. Subsequently, the infectious- inflammatory theory was replaced by the vertebrogenic theory, which was greatly facilitated by the development of neuroimaging research methods and successful operations for the removal of disc herniations. The cause of lumbar pain began to be sought in degenerative-dystrophic changes in the spine, in compression of a nerve root by a herniated disc, which is reflected in the corresponding terminology: discogenic radicular compression syndrome, vertebrogenic radiculopathy, vertebrogenic reflex syndrome.

Among neurologists, the theory of the predominantly muscular origin of dorsalgia (back pain) has gained popularity. Many researchers believe that in almost 90% of cases the cause of lumbar pain is myofascial dysfunction, and vertebrogenic disorders account for no more than 10%. This is reflected in the corresponding terminology: dorsalgia, lumbodynia, myofascial syndrome.

It should be noted that nociceptive impulses, regardless of the source of origin, activate α- and γ-motoneurons of the spinal cord, causing spasm of the muscles innervated by this segment, which leads to local ischemia, irritation of nociceptive receptors and ultimately to the formation of a vicious circle: pain - spasm muscles - pain.

Today, three main pathophysiological mechanisms for the development of back pain have been established:

• peripheral sensitization (increased excitability of peripheral nociceptors); develops in musculoskeletal structures (the primary source of pain) as a result of the release of anti-inflammatory substances (bradykinin, prostaglandins) due to damage (irritation) to these structures due to injury, hypothermia, stretching, etc.;

• neural ectopia; associated with damage to the root or nerve (trauma, compression, ischemia). Due to a decrease in the threshold of excitability of sensory neurons, ectopic sources of spontaneous impulses appear - neuropathic, or radicular, pain, which is the most difficult to treat. Another source of sensitization is the spinal ganglion, as well as hernial protrusion of the intervertebral disc;

• central sensitization; consists of increasing functional circuits in the spinal cord and brain. In this case, any painful irritation intensifies in the spinal cord and leads to aggravation of the pain itself as a sensation.

Back pain is caused by functional and dystrophic changes in the tissues of the musculoskeletal system (fascia, muscles, tendons, ligaments, joints, discs) with possible involvement of adjacent structures of the peripheral nervous system (roots, nerves). For convenience, we will distinguish primary and secondary syndromes of LBP.

Most back pain is based on musculoskeletal morphofunctional changes (primary LBP syndrome) - predominantly degenerative-dystrophic lesions of the spine:

• osteochondrosis (dystrophic damage to the intervertebral disc and adjacent vertebral bodies with the formation of spondylosis);

• spondyloarthrosis (arthrosis of the intervertebral (facet) joints, which are ordinary synovial joints).

It has been shown that the processes of degeneration in intervertebral and peripheral joints are not fundamentally different. In the origin of pain, functionally reversible blocking of intervertebral joints is of great importance, which can precede the development of spondyloarthrosis and osteochondrosis (this is what explains the pain syndrome, for example, in adolescents) and can occur in already affected joints, causing clinical manifestations of vertebrogenic pathology. Muscles almost always respond to the appearance of pain impulses with a tonic reflex reaction. The physiological basis for muscle tension that follows any pain lies in the immobilization of the affected area of the body, the creation of a muscle corset. However, the spasmed muscle itself becomes a source of additional pain. In addition, the muscles may suffer primarily, and not as a result of morphological or functional disorders in the spine. Excessive tension in a number of muscle groups, due to various reasons (from anti-physiological posture to muscle distress caused by anxiety), leads to dysfunction of myofascial tissues with the formation of pain. Myofascial pain syndromes can be observed regardless of vertebrogenic pathology, and also complicate almost any vertebrogenic pain. Pain associated with the described reasons is relatively benign in nature.

Risk factors for back pain can be divided into predisposing and precipitating ones. Predisposing, in turn, can be divided into non-correctable and correctable.

Non-correctable factors: heredity, age and gender.

Adjustable factors:

- poor posture (scoliosis, kyphoscoliosis, stoop);
- prolonged isometric muscle tension in an uncomfortable position at work and at home;
- exposure to adverse weather factors (local and general hypothermia);
- weak muscle corset due to lack of regular physical education;
- diseases of the gastrointestinal tract due to impaired absorption of B vitamins;
- weight gain;
- smoking, alcohol abuse, food with a lot of spices and purine bases.

Against the background of such predisposing factors, one of the provoking factors is enough to cause back pain. Such factors include sudden local or general hypothermia, inadequate physical movement or muscle tension in individuals with poorly developed muscle corset, acute emotional stress, which causes facilitation of neuromuscular transmission, and hence the occurrence of muscle spasm.

We should not forget about the secondary origin of back pain, which must be excluded.

Possible causes of secondary LBP syndrome:

- primary and metastatic tumors of the vertebrae, spinal cord, retroperitoneal space;
- vertebral fractures;
- infectious lesions of the vertebrae and intervertebral discs (tuberculosis, brucellosis, epidural abscess);
- non-infectious inflammatory diseases (ankylosing spondylitis, Reiter's syndrome, rheumatoid arthritis);
- metabolic bone lesions (osteoporosis, osteomalacia);
- growing pains (scoliosis);
- acute disorders of spinal circulation;
- referred pain in diseases of the pelvic organs (including renal colic, gynecological diseases).

You should also be aware of rarer causes of secondary back pain. For example, in older patients, especially postmenopausal women, who suddenly experience excruciating pain, radiographic examination often reveals pathological vertebral fractures associated with osteoporosis. The possibility of the onset of serious spinal and visceral pathologies with banal back pain requires constant medical vigilance and immediate intervention by a specialist.

Diagnostics

If a patient has symptoms of spinal pathology, he should be immediately referred to a specialist for further examination.

Symptoms are indicators of serious spinal pathology:

- no history of back pain;
- high pain intensity;
- independence of pain intensity from body position and movements;
- increased pain at night;
- age under 20 years and over 55 years;
- recent injury;
- risk factors for the development of spinal infection (presence of urogenital infection, drug immune suppression (steroid use), HIV);
- history of oncological process;
- fever and unexplained weight loss;
- general weakness;
- pelvic disorders;
- progressive neurological deficit;
- gait disturbance.

In the absence of such symptoms, there is a high probability that the pain is relatively benign. Pain caused by the musculoskeletal factor has a number of features:

• there is no correlation between the severity of osteochondrosis, spondyloarthrosis and the intensity of pain;

• pain is intermittent while the anatomical pathology persists or even progresses.

In this regard, in the diagnosis of this category of pain, the main emphasis should be on clinical manifestations rather than on radiological findings. Spinal osteochondrosis is most often complicated by reflex muscular-tonic syndromes (85%) and much less often by compression syndromes in the form of radiculopathies (15%).

Symptoms of radiculopathy:

• intense, sharp, shooting pain, radiating to the toes (“long” pain), intensifying with movement in the lumbar spine;

• symptoms accompanying pain: numbness, tingling, burning;

• symptoms of loss of root function (hypesthesia, loss of reflexes, muscle weakness and wasting);

• Lasègue's test is accompanied by intense pain in the lower back with irradiation along the affected root;

• upon palpation, tension and soreness of the paravertebral muscles.

Isolated pain, even strictly corresponding to the zone of innervation of the affected root, cannot be regarded as radiculopathy. The most important symptoms for diagnosing radiculopathy are the combination of pain with symptoms of prolapse. Pain associated with radiculopathy is not in itself an indication for surgery and can be treated very effectively conservatively (treatment can last 6-8 weeks). In this regard, patients with radicular pain and minor neurological deficit are treated conservatively, and only in case of ineffectiveness and neuroimaging proven compression are the possibilities of surgical intervention discussed.

Reflex muscular-tonic syndromes are characterized by pain of varying intensity. Any paravertebral and extravertebral muscles can be involved in the pathological process, but the leaders are the piriformis, gluteus medius and paravertebral muscles at the lumbar level.

Myofascial syndromes are especially difficult to diagnose because they manifest as “referred” pain. Diagnosis is based on finding a muscle that is in spasm, painful on palpation, with characteristic local hypertonicity, pressing on which reproduces the pain familiar to the patient at a distance from the spasmed muscle.

Clinical manifestations of muscular-tonic syndrome:

• dull deep pain within the spasmodic muscle (“short” pain), provoked by movement involving the corresponding muscle;

• Lasegue's test is accompanied by local pain in the lower back or hip;

•on palpation the muscle is tense, painful, with local hypertonicity.

It is extremely important to assess the duration of the pain syndrome to determine its nature - acute or chronic. If the pain continues for more than 6 weeks, the pain may be chronic. Prolonged pain is associated either with involvement of the root in the pathological process, or with erroneous diagnosis, which requires prior examination of the patient to exclude serious spinal pathology. However, most often the chronicity of pain is due to psychological reasons.

Psychosocial factors contributing to the chronicity of LBP:

- social or financial problems;
- emotional stress at the onset of the disease;
- avoidance behavior and reduction of an active position in the strategy of overcoming conflict situations (secondary benefit from the disease);
- the expectation that back pain is a manifestation of a “dangerous” disease and can be a cause of disability;
- tendency towards depression and social dependence.

The presence of these factors in the patient contributes to the chronicity of pain and can seriously affect the success of treatment.

Materials The study of the patient's condition involves determining the degree of difficulty in movement due to pain when lifting the leg up, studying the symptoms of tension, muscle tone and local hypertonicity, as well as the neurological status. First of all, in the neurological status, areas of paresthesia and/or hypoesthesia, dorsoflexion of the foot and big toe, knee and Achilles reflexes should be examined. Among additional methods, clinical tests of urine and blood, ultrasound of internal organs and the pelvis play an important role. X-rays of the spine are performed in direct and lateral projections in states of extreme flexion and extension, and are also supplemented by CT or MRI studies. Magnetic resonance imaging is more informative for visualizing the spinal cord. However, the capabilities of radiological research methods should not be overestimated; the doctor must constantly remember the pain syndrome and the many reasons that cause it. Thus, the presence of osteochondrosis does not at all exclude other causes for the manifestation of lumbar pain, for example, renal pathology.

Tactics for managing patients with LBP

If there is no suspicion or a serious spinal pathology is excluded, it is necessary to inform the patient about the favorable prognosis of the disease and the high probability of complete regression of the acute pain episode.

Treatment consists of effective pain relief and prompt activation of the patient, which promotes regression of symptoms and reduces the risk of chronic pain. The patient should be aware that return to normal activity should begin as soon as possible. The guideline for increasing motor activity is the intensity of the pain syndrome. Expanding the patient's motor capabilities should not aggravate the pain syndrome.

Nonsteroidal anti-inflammatory drugs (NSAIDs) are the gold standard for treating back pain. In turn, diclofenac sodium is considered the gold standard among NSAIDs, combining high efficiency and safety. The duration of use and method of administration of NSAIDs depend on the intensity of the pain syndrome. For moderate pain syndromes that do not limit the patient's motor capabilities, gels and ointments containing diclofenac sodium can be applied to the painful areas (spasmodic muscles) for 7-10 days. In case of intense pain that significantly limits the patient's movement within the premises, injection routes of administration are used for 3-7 days with a subsequent transition to oral forms. The average treatment time is 3-4 weeks and may increase with radiculopathy.

Severe pain or lack of success from the use of NSAIDs requires the use of stronger analgesics with the effect of opioids. Depending on the intensity of the pain syndrome, a variety of analgesics are used to relieve it - from NSAIDs to narcotic analgesics.

Considering that muscles are almost always involved in the pathological process, it is advisable to combine NSAIDs with muscle relaxants. This combination allows you to shorten the treatment period and reduce the risk of developing side effects of NSAIDs by reducing the dosage of the latter. Important components of rehabilitation therapy are physical therapy and physiotherapy.

The presence of symptoms of depression in a patient and/or chronic pain are an indication for the prescription of antidepressants or psychotherapeutic treatment. Antidepressants are first-line drugs in the treatment of chronic pain syndromes. The administration of anticonvulsants also enhances the analgesic effect. Thus, the choice of analgesic depends on the intensity of the pain syndrome and its duration.

It is necessary to encourage the patient to make a positive change in life style (avoidance of anti-physiological poses, rational equipment of the workplace, stopping smoking, body weight control, physical therapy, annual massage courses, mastering autogenic training with the ability to relax muscles).

Despite the seemingly known aspects of pathogenesis and the availability of a wide range of drugs used to treat back pain, many patients and doctors are not satisfied with the quality of treatment. Today there are no uniform approaches to the treatment of back pain, and issues of prevention remain at the level of general recommendations for the patient to lead an active healthy lifestyle.

The program of the symposium, in our opinion, was compiled very successfully, since it raised questions of evidence for the use of precisely those areas in pain therapy that were mentioned above. Let us dwell on the most striking and interesting facts heard at the symposium.

Professor BW Koes from the Netherlands presented a large review of the evidence base regarding the treatment of LBP. Currently, in medicine, when developing therapeutic recommendations for practitioners, the main attention is paid to issues of evidence.

The main points of the speech: pain is a subjective phenomenon, and there is no clear objective confirmation of it; pain symptoms are variable; the etiology and prognosis of pain syndrome are heterogeneous. Today, there is still no consensus on the treatment of LBP.

In Europe, back pain is a fairly common symptom. This is evidenced by European statistics, according to which new cases of pain occur annually in 5% of the population. Today, 15-20% of the population suffers from pain, 60-80% of people have experienced pain at least once in their lives. In this regard, in developed countries, back pain is comparable in scale to a pandemic and is a serious medical and socio-economic problem. According to epidemiological studies conducted in the USA and Western European countries, the prevalence of back pain ranges from 40 to 80%. It has been established that about 25% of the adult population in different countries of the world have been absent from work at least once in their lives due to back pain; the number of days of disability annually accounts for up to 15% of total disability. Thus, in the UK in 1994, 52 million working days were lost, which was second only to diseases of the respiratory and circulatory system. In 2016, this figure increased to 90 million working days. And although in many cases back pain is not accompanied by loss of ability to work, it nevertheless sharply worsens the quality of life of people.

In more than 50% of patients, pain subsides after a week, in 40% improvement occurs after 8 weeks, and the remaining 7-10% continue to experience back pain for 6 months or more. Moreover, 70-90% of patients experience repeated pain after some time. Epidemiological data indicate a higher frequency of pain syndromes in women, regardless of age, but with a peak of pain at 35-45 years. 12-26% of children and adolescents complain of lower back pain.

Although chronic back pain is not life-threatening, it is a burden for patients and those around them. The high costs of treating pain and the frustration of doctors when working with patients force them to look for more and more evidence-based methods for successfully combating pain.

Failures in the treatment of LBP are often associated with myths among patients and doctors regarding its origin, prognosis and therapy.

The most common myths about LBP:

- If the disc is displaced, surgery must be performed.
- The neuroimaging picture and the severity of the pain syndrome coincide.
- The pain will go away over time, so you should not fight it (this makes therapy difficult and leads to the pain developing into chronic pain).
- Back pain is a cause of disability (such overestimation causes the formation of the phenomenon of chronic pain in patients).
- For back pain, bed rest is necessary (in fact, prolonged bed rest only worsens the chances of a full recovery and negatively affects the possibility of rehabilitation).

Currently, from the media and the Internet, patients receive numerous false information about miraculous methods of getting rid of back pain using various devices, mattresses, massage options and many other types of treatment (for example, bamboo). In this regard, patients turn to specialists late and do not receive timely assistance.

Treatment methods for LBP

The reliable effectiveness of treatment for LBP can only be confirmed by randomized trials, so it is necessary to rely on the results of large reviews. Professor BW Koes focused on Cochrane reviews, 2015.

The Cochrane review (2015) suggests many treatments for back pain, suggesting that there is no single approach to treatment.

Suggested treatments for LBP:

- acupuncture;
- active lifestyle;
- bed rest;
- injection therapy;

- massage;
- muscle relaxation;
- biopsychological rehabilitation;
- physical therapy;
- neuroreflexotherapy;
- spinal manipulation therapy;
- fixation of the lower back with a corset;
- physical therapy aimed at strengthening muscles;
- non-steroidal anti-inflammatory drugs;
- surgical methods of treatment;
- rehabilitation, etc.

At the same time, the level of evidence for the use of each method can be high, medium or contradictory.

Analysis of literary sources shows different approaches to medical tactics for acute, subacute (lasting up to 12 weeks) and chronic (more than 12 weeks) pain. A total of 61 studies including 6390 patients were analyzed.

Initially, the effect of exercise on the course of pain in patients with acute and chronic pain was discussed. It has been shown that for subacute pain, special exercises are reliably as effective as drug therapy, and for chronic pain they are even more effective. However, for acute pain there is no indication of the reliable effectiveness of special exercises.

Regarding spinal manipulation, 51 articles from 36 randomized trials were analyzed. At the same time, all studies give contradictory conclusions - from positive to negative, that is, there is no evidence of the positive effect of manual methods for back pain, although this is also due to the lack of a unified methodological approach to organizing research.

In acute pain, muscle relaxants have been proven to be more effective than placebo.

Bed rest and exercise have been proven to be ineffective. There is no evidence of the effectiveness of spinal fixation (corset).

In case of chronic pain syndrome, the positive influence of lifestyle has been proven, the creation of schools for patients to change their lifestyle. There is conflicting information about the effectiveness of antidepressants, acupuncture, biofeedback, etc., although this does not mean that they are not effective.

Thus, an analysis of more than 500 randomized studies did not clarify the situation regarding the effectiveness of various methods of treating LBP, and therefore there is a need to create a unified guideline for back pain. Such guidelines, containing recommendations for formulating a diagnosis, conducting therapy and examining patients, exist in Israel, Finland, Germany, Switzerland, Australia, Denmark, and Sweden.

According to these guidelines, for acute pain, an active regimen, psychological support for the patient, and the prescription of paracetamol and NSAIDs are recommended. Pharmaceutical drugs (muscle relaxants, opioids, and local anesthetics) are not recommended in all guidelines.

These recommendations are also heterogeneous regarding manipulations. Specific exercises are not indicated for 2 weeks, although American guidelines advise doing exercises from the first day of illness.

At the forefront of the recommendations are advice on activating patients at the time of pain (this provision has an evidence base), which leads to faster regression of pain, and maintaining an active lifestyle for prevention, faster recovery and prevention of disability. Bed rest negatively affects the results of therapy.

For acute pain, paracetamol and NSAIDs are used. Chronic pain syndrome primarily requires social adaptation of the patient, and treatment focuses on improving performance rather than on pain.

Since benzodiazepines are often used to relieve pain, MD Isabel Englert made a statement about the risks of their use. The main points of the report: benzodiazepines can be used in complex therapy of pain syndrome with caution; they have side effects such as drowsiness, cognitive impairment comparable to the effects of alcohol, sleep induction, motor dysfunction in the elderly, as well as rapid development of dependence and withdrawal syndrome; Benzodiazepines are indicated for short-term use only and only in patients with severe restlessness and anxiety.

Data from MD Jan MA Mens (University Medical center Rotterdam, Department of Rehabilitation Medicine) was dedicated experience treatment pain V back V Netherlands . The Dutch recommendations include the following provisions:

• in the presence of acute pain in a young somatically healthy person, 3000 mg of paracetamol per day is prescribed;

• if paracetamol is ineffective, a non-selective NSAID is prescribed;

• in patients with an increased risk from the gastrointestinal tract, three ways to solve the problem are proposed:

– non-selective NSAID with a proton pump inhibitor;

– selective NSAID;

– a mild opioid.

• For patients at risk of cardiovascular disease, if paracetamol is ineffective, a non-selective NSAID or opioid is prescribed.

Muscle relaxants in the treatment of LBP

Combined treatment with NSAIDs and muscle relaxants is used in 24% of patients.

Naturally, this thesis raised questions from the audience, since muscle spasm is the main pathogenetic aspect of pain, and the effectiveness of muscle relaxants has been confirmed in many randomized studies.

The speaker made a reservation that muscle relaxants in the Netherlands, as well as in the USA, are primarily understood as benzodiazepines, so their use is limited. In the author's view, non-benzodiazepine muscle relaxants are indicated for their effectiveness and, conversely, benzodiazepines should not be used as muscle relaxants.

Next we talked about antidepressants, since in recent years chronic pain has been associated with hidden depression. An analysis of the literature data carried out by the speaker showed that there is no clear correlation between pain and depression, however, positive results have been recorded when analgesics are combined with antidepressants.

Thus, to increase the effectiveness of LBP therapy, an individual approach is necessary. In this case, it is necessary to analyze the results of treatment with analgesics and take into account accompanying symptoms: psychological dysfunction, muscle spasm, the presence of depressive reactions.

Therefore, the first step in the treatment of LBP should be the administration of paracetamol, NSAIDs and/or non-benzodiazepine muscle relaxants, and, if ineffective, mild opioids and/or tricyclic antidepressants.

Professor Geza Balint (National Institute of Rheumatology and Physiotherapy, Budapest) cited data from the National Health Insurance Service, according to which in 2016 the number of patients on sick leave for lumbar pain exceeded 86 thousand (3.135 million sick days).

On the vertebrogenic causes of pain syndromes, the importance of physical methods of treatment, as well as the role of the doctor in the social adaptation of the patient and an explanation of the need for an active lifestyle in the treatment of LBP. It was noted that pain therapy should be started immediately. Thus, according to the professor, with immediate analgesia, 40% of patients returned to work after 8 days.

Due to the great interest in the use of muscle relaxants, the speaker focused on the results of a prospective, randomized, double-blind, placebo-controlled study of the use of Mydocalm, which complies with the requirements of GCP and the Declaration of Helsinki, in which 16 Hungarian and a number of foreign centers participated.

The study included 255 patients with low back pain that appeared no earlier than 5 days before the start of the study, who had no cases of lumbar pain or specific diseases (oncological, traumatological, inflammatory) within 3 months before. The treatment lasted two weeks. Due to the fact that the goal of treatment is to quickly return the patient to an active lifestyle, it is necessary to avoid drugs with a sedative effect. When using Mydocalm there is no need to be afraid of such an effect, since it simply does not exist. Patients can even drive a car. The results of the study showed that when treated with Mydocalm, the length of stay on sick leave was reduced by 1-2 days, that is, the recovery process was significantly accelerated.

In many countries where there are strict requirements for the registration and use of drugs (for example, Germany), the most often prescribed central muscle relaxant is Mydocalm, the muscle relaxant effect of which is based on stabilizing cell membranes and blocking sodium ion channels. Unlike other drugs in this group, Mydocalm does not impair psychomotor functions and does not have a sedative effect.

The use of muscle relaxants in the treatment of back pain has flared up because it is they that make it possible to break the vicious circle: pain - muscle spasm - pain. Tolperisone hydrochloride (Mydocalm), the product of original Hungarian drug research, has been used in clinical practice for 40 years in more than 30 countries.

Over time, among the indications for the use of Mydocalm, the treatment of diseases of the musculoskeletal system has come to the fore. Tolperisone hydrochloride differs from other muscle relaxants in its pharmacological properties, causing muscle relaxation without concomitant sedation and withdrawal symptoms. In accordance with the chemical structure, the tertiary amine tolperisone hydrochloride has lidocaine-like activity and has a membrane-stabilizing effect on neurons, as shown in experiments on isolated nerves. Mydocalm dose-dependently suppresses mono- and polysynaptic reflexes at the level of the spinal cord, and also eliminates muscle tension.

To date, several open placebo-controlled studies have been conducted on the effect of Mydocalm on the severity of pain spasms. A double-blind, randomized study in 138 patients aged 18 to 75 years, conducted in 8 rehabilitation therapy centers in Germany, showed that 89.6% of the population of all included patients and 94.6% of valid cases responded positively to tolperisone hydrochloride. The effectiveness compared to placebo was significantly higher ($p = 0.02$).

Mydocalm's tolerability turned out to be very good compared to placebo (96.6% of cases). Moreover, an important indicator was the lack of effect on blood pressure and heart rate. The effectiveness of the drug was higher in patients with complaints lasting less than a year and receiving physiotherapy.

Professor V.V. Povoroznyuk shared his experience of using Mydocalm in the complex treatment of patients with back pain. His observations indicate that the combination of Mydocalm with NSAIDs makes it possible to reduce the dose of NSAIDs, as well as shorten the duration of treatment.

Our experience in using Mydocalm for muscle spasms (Department of Reflexology of the Kharkov Medical Academy of Postgraduate Education) allowed us to identify positive muscle relaxant, hemodynamic and analgesic effects of the drug, which was confirmed electromyographically and rheovasographically, as well as according to the visual analog pain scale and the McGill pain questionnaire. The developed regimen for taking Mydocalm includes its injection of 100 mg twice a day for a week for acute pain, and then 150 mg three times a day for two weeks. A significant advantage of Mydocalm is the availability of a ready-made injectable dosage form.

Professor A.A. Skoromets (St. Petersburg Medical Academy) developed a method of administering Mydocalm using intramuscular blockades, which are carried out in the gluteal muscles (minimum and medium) - at a point on the middle part of the line connecting the ischial tuberosity with the greater trochanter of the femur; with piriformis syndrome - in the thickest part of the gastrocnemius muscle.

Moscow neurological and neurosurgical schools (Russian State Medical University, professors G.N. Avakyan, A.A. Nikonov, associate professor E.I. Chukanova) have extensive experience in the use of Mydocalm, which have shown the effect of this drug on the severity of pain, anxiety , EMG indicators, and also developed differentiated indications for its use.

Thus, it was shown that Mydocalm is effective after the first injection in patients with acute vertebrogenic pathology, and on the 7th day there is a significant improvement in the coefficient of household adaptation, which allows reducing treatment time, the speed of impulse conduction along afferent and efferent fibers increases, and the level of anxiety.

The goal of acute pain therapy is to reduce pain, help the patient return to an active lifestyle as soon as possible, and prevent the transformation of acute pain into chronic pain. Back pain showed that Ukrainian and Russian doctors have extensive experience in the treatment of pain syndromes, which often overlaps with European ones. Today, the time has come to unite the scientific positions of Ukrainian doctors dealing with the problems of LBP to create clearly developed treatment algorithms taking into account an individual approach, because despite the undoubted benefits of having medical standards, we should not forget that we are not treating the disease, but the patient.

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