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Back pain: development of diagnostic and treatment algorithms at the primary health care level of the Republic of Uzbekistan

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ABSTRACT--*The term "lower back pain" (LBP) is understood to mean pain, muscle tension and / or stiffness, localized in the back between the XII pair of ribs and lower gluteal folds with or without irradiation to the lower limb. LBP is a symptom, not a diagnosis, which was included in the ICD-10 as a registration category (M54.5 - "Lower back pain") due to its high prevalence and frequent inability to establish a specific nosological cause of pain*

Keywords*—diagnostic, diagnostic, algorithms, Republic of Uzbekistan*

I. INTRODUCTION

It should be noted that this pathology is considered one of the most common and studied, however, the lack of generally accepted terminology, classification and indications for the appointment of a diagnostic event, specialist advice and treatment introduces great confusion to this problem. The complexity of studying LBP lies in the multidisciplinarity of the problem: pain in the lower back as a clinical manifestation can occur in many diseases and pathological conditions. This is due to the fact that almost all the anatomical structures of the lumbosacral region, abdominal cavity, and pelvic organs can be a source of pain impulse to this area. This situation leads to the fact that patients turn to doctors of various specialties, as a result of which they receive help depending on the specifics of their knowledge and perceptions of the latter, which correspond to a particular medical profile. There are a large number of publications in the literature on the epidemiology of LBP, however, the data presented in them often differ greatly due to the large clinical and diagnostic uncertainty of this condition. Pain in the lower back is one of the most frequent complaints of patients in general medical practice. According to our data, 24.9% of active requests for outpatient care for people of working age are associated with this condition. Of particular interest in the problem of BNS is due, first of all, to its wide distribution: at least once in a lifetime, at least 70-80% of the adult population of the globe experiences these pains, about 1% of the population completely loses their ability to work and 2-3 times more - they become temporarily disabled due to this condition. More than 50% of patients report a decrease in working capacity in the presence of LBP. The total disability of patients - a low level of working age, in turn, leads to pronounced material losses and costs for diagnosis, treatment and rehabilitation, as well as health consequences and negative impact on the national economy. In Russia, to date, only a few epidemiological studies of LBP have been carried out, which mainly concerned organized groups. Thus,

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a study of the workers and employees of a secondary engineering plant in 1994-1995 showed that 48% of respondents complained about LBP during their lifetime, over the past year - 31.5%, and at the time of the survey - 11.5%, without significant differences between men and women. High prevalence of LBP was detected among workers in vehicles (2001) and a metallurgical plant (2004): 43.8% and 64.8%, respectively. When comparing urban and rural residents, it turned out that among the former, the prevalence of chronic BNS reaches 57%, and among the latter - 40%. It was shown that the problem of LBP concerns not only the adult population. So, LBP is detected in 7-39% of adolescents. In addition to the high prevalence of LBP, a major problem for studying this condition, and as a result, for organizing clinically-economically optimized care, is the lack of a generally accepted classification in Russia.

In our country, the most accepted scheme is the separation of BNS into two categories: primary and secondary. Primary LBP is considered to be a back pain caused by dystrophic and / or functional changes in the tissues of the musculoskeletal system of the spine (arched joints, intervertebral discs, fascia, muscles, tendons, ligaments) with the possible involvement of adjacent structures (root, nerve). The main causes of the primary syndrome of BNS are mechanical factors that are determined in 90-95% of patients: dysfunction of the muscular-ligamentous apparatus; spondylosis; hernia of the intervertebral disc. Everything else refers to the secondary BNS, the main reasons for which are: congenital anomalies (lumbarization, spina bifida, etc.), injuries (vertebral fractures, protrusion of the intervertebral discs, etc.), arthritis (ankylosing spondylitis, reactive arthritis, rheumatoid arthritis, etc.), other diseases of the spine (tumors, infections, metabolic disorders, etc.), projection pain in diseases of the internal organs (stomach, pancreas, intestines, abdominal aorta, etc.) and diseases of the urogenital organs.

On the other hand, A.M. Vane divided the causes of back pain into 2 large groups: vertebrogenic and nonvertebrogenic. Vertebrogenic causes of pain, with a decrease in the frequency of occurrence, included: prolapse or protrusion of the intervertebral disc, spondylosis, osteophytes, sacralization and lumbarization, facet syndrome, ankylosing spondylitis, spinal stenosis, instability of the vertebral-motor segment, vertebral fractures, osteoplasty and functional impairment. Among the non-vertebrogenic causes are: myofascial pain syndrome, psychogenic pain, reflected pain in diseases of internal organs (heart, lungs, gastrointestinal tract, genitourinary organs), epidural abscess, syringomyelia, etc. 3 types of pain are distinguished in the clinical plan, depending on the location of the main pathological focus. in back:

- local;
- projected (sometimes projection);
- reflected.

Local pain (topalgia) occurs at the site of tissue damage (muscles, fascia, tendons and bones). Usually they are characterized as diffuse and are permanent; they relate to nociceptive (somatic) pain syndromes.

Reflected pains (synalgia) are pains that occur during damage (pathology) of internal organs (visceral somatogenic) and are localized in the abdominal cavity, small pelvis, and sometimes in the chest. This pain is felt in those areas that are innervated by the same segment of the spinal cord as the affected organ (for example, pain in the lumbar region with an ulcer of the posterior wall of the stomach, delaminating abdominal aortic aneurysm, pancreatitis, etc.).

Projected pains are both widespread and precisely localized in nature and, according to the mechanism of occurrence, are neuropathic. They occur when the nerve structures that conduct impulses to the pain centers of the

brain are damaged (for example, phantom pains, pains in areas of the body innervated by the squeezed nerve). Radicular, or radicular pain, is usually shooting in nature and is a type of projected pain. By duration, pain in the lower back can be acute (up to 12 weeks) (aLBP) and chronic (over 12 weeks) (cLBP).

According to the definition of the International Association for the Study of Pain (1979), chronic is defined as "pain that continues beyond the normal healing period of damaged tissue". In turn, acute pain is a new pain arising in response to damage, inextricably linked to the damage that caused it. And also, recurring back pain that occurs with an interval of at least 6 months from the end of the previous exacerbation, that is, after a completely asymptomatic period, and an exacerbation of chronic back pain - if the specified interval is less than 6 months, or if the pain is to the end not docked.

At the same time, in other countries where they well understand how large the medical and social burdens are, as well as the sizes associated with it, in the last 10-15 years a large number of clinical recommendations for general practitioners have been developed. All patients should carry out diagnostic sorting of patients into three categories: patients with specific LBP, with radical pain and with visible LBP. In accordance with this, during the initial treatment of the patient with LBP, an anamnesis and complaints should be collected and a general examination of the patient should be carried out. The purpose of the initial examination is an attempt to identify a possible serious specific pathology or sciatic syndrome. However, it is well known that in most cases of LBP on the basis of initially detected clinical signs, this is often difficult to do. Therefore, there were attempts to create diagnostic systems based on the separation of LBP depending on the prevalence of pain, the variability of pain during the day, the severity of functional impairment, the characteristics of the clinical course, etc. However, none of these systems has become generally recognized. In addition, as shown by recent data, back pain is weakly correlated with the results obtained using imaging methods: in 85% of cases, the pathological conditions detected by doctors and neurological disorders do not correlate with pain, in outpatient practice, approximately 4% of people with BNS are found compression.

Spondylitis and infections are even less common, and the frequency of herniated discs is 1-3%. As mentioned above, a simple and practical classification, which has gained international recognition, suggests dividing LBP during a clinical examination of a patient into three categories (the so-called diagnostic triage):

1) probable severe specific diseases, i.e. a malignant tumor, infection, inflammatory systemic disease, fracture of the spine, cauda equina syndrome;

2) radicular pain;

3) non-specific BNS.

II. PROBABLE SEVERE SPECIFIC DISEASES

Given the above, already at the first treatment of the patient, it is necessary to identify signs that could indicate the presence of a "serious" pathology, which may be the cause of these pains. And although the frequency of "serious" causes of acute back pain at the first call for medical help is less than 1%, all these patients should undergo an examination aimed at identifying a possible serious, life-threatening pathology. Currently, this group of the most formidable diseases includes:

- oncological diseases (including history);

- vertebral fractures;
- infections (including tuberculosis);
- abdominal aortic aneurysm;
- cauda equina syndrome;
- spondylitis.

These are diseases in which urgent care is necessary for the patient. In order to suspect these pathological conditions, during the patient's examination, attention should be paid to the presence of fever (above 38 ° C for 3 or more days), local pain and an increase in local temperature in the paravertebral region, which are characteristic of infectious lesions of the spine. Its risk is increased in patients receiving immunosuppressive therapy, any intravenous infusion, suffering from HIV infection and drug addiction. Fever syndrome in acute LBP is detected with a frequency of less than 2%. The likelihood of an infectious nature of pain in the spine increases if:

- in a recent history of the patient, iv manipulations (including drug addiction) were performed;
- there are focus of infection in the area

• urinary tract;
• lungs;
• skin.

The sensitivity of fever syndrome for infections in the back is from 27% with tuberculous osteomyelitis to 83% with an epidural abscess. It was shown that with bacterial infections, increased sensitivity and tension in the lumbar region with percussion is 86%, although the specificity of this test does not exceed 60%.

The presence of a primary or metastatic tumor of the spine may be indicated by an unreasonable decrease in body weight, a malignant neoplasm of any localization in the anamnesis, the preservation of pain at rest and at night, as well as the patient's age over 50 years. The presence of a tumor in the history is a highly specific factor for the neoplastic etiology of LBP, which should be excluded in the first place. Other important signs that increase the specificity of the diagnosis of the tumor nature of LBP are:

- unexplained weight loss (more than 5 kg in 6 months);
- lack of improvement within one month of active
conservative treatment;
- the duration of severe pain more than one month.

For patients younger than 50 years old, without an oncological history and unexplained weight loss, in whom conservative therapy was effective for 4-6 weeks - an oncological disease can be excluded with almost 100% probability. Compression fracture of the spine often occurs as a result of trauma, with the use of glucocorticoids and in patients older than 50 years. A compression fracture of the vertebra may be suspected in a patient with BNS or with a recent significant spinal injury, or in patients with established osteoporosis, or in persons over the age of 70 years. It should be noted that most patients with an osteoporotic fracture do not have a history of back injury. In the presence of a pulsating formation in the abdomen, signs of atherosclerotic vascular damage, and unrelenting back pain at night and at rest, there is a high probability that the patient has developed an abdominal aortic aneurysm. It is the most common form of vascular aneurysm. Its frequency at autopsy is 1-3%, and among men it occurs 6 times more often than among women. The appearance of LBP may be a sign of aneurysm growth, warning of an impending aortic rupture. LBP with aneurysm often manifests itself at rest, and the pain itself can spread to

the front and side surfaces of the abdomen, in addition, a pulsating formation can be palpated there. If the patient complains of weakness in the legs, impaired urination, and he has a decrease in sensitivity in the anogenital region ("saddle block anesthesia") and pelvic disturbances, compression of the structures of the cauda equina should be suspected.

Cauda equina syndrome is a very rare pathological condition, the frequency of which is below 4/10000 patients with LBP. If the above symptoms do not exist, then the likelihood of this syndrome is reduced to less than 1 in 10,000 patients with LBP. With increasing muscle weakness in the limbs, the patient should immediately be consulted by a neurosurgeon, since this symptom may be associated with a pronounced hernia of the intervertebral disc. In order to suspect a life-threatening disease during the first treatment of a patient with LBP, the diagnostic search should focus specifically on their identification. To do this, use “threat signs”.

It should be emphasized that, according to internationally accepted standards, if a patient with LBP does not show “threat signs” or radicular pain, then there is no need to conduct a laboratory-instrumental examination, including even x-ray of the spine or refer to a consultation with narrow specialists. The main task of the initial examination of a patient with back pain is to exclude serious pathology and identify risk factors for an unfavorable prognosis, and, if possible, to contribute to the diagnosis.

III. SUMMARY OF RECOMMENDATIONS FOR THE DIAGNOSIS нБНС

Acute нБНС:

- An anamnesis should be collected and a brief clinical examination performed;

- if there is a history and / or examination of the data for the presence of a possible serious pathology in the patient or signs of nerve root compression, a more detailed clinical examination should be performed;

- diagnostic imaging studies (including x-ray examination, CT and MRI) are not shown in acute нБНС;

- A reassessment of medical history and clinical data should be performed in patients who have not improved for several weeks.

Chronic нБНС:

- it is recommended that diagnostic sorting be used to identify a specific severe disease or root compression and to evaluate psychosocial factors, sometimes regarded as prognostic factors of chronicity. In chronic nBNS, there is no need for palpation of the back (spine, muscles), functional tests to determine spinal mobility or a straight leg lift test (Lasegue);

- X-ray imaging methods (radiography, MRT, CT), scintigraphy, discography and other methods are not recommended. They are strictly indicated in cases of suspected serious pathology. MRT is the best imaging method for radicular syndrome, for discitis or cancer. Radiography is recommended to detect structural changes in the spine (fractures, tumors, etc.).

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