DEVELOPMENT OF DIFFERENTIATED APPROACHES TO THE COMPLEX TREATMENT OF OSTEOARTHRITIS

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ABSTRACT

Osteoporosis is a systemic disease of the skeleton, characterized by a decrease in bone mass per unit volume and microdisorders in the architectonics of bone tissue, which lead to an increase in the fragility of bones and the possibility of fractures. Osteoporosis is a multifactorial disease, accompanied by a decrease in bone mineral density and its strength, as well as neuromuscular insufficiency, which together increase the risk of falls and lead to frequent fractures bones - mainly fractures in the hip, vertebrae and radius, occurring with minimal trauma or spontaneously. The result of this study is to achieve a reduction in pain syndrome, functional improvement of joint condition, and prevention of disability through the use of complex restorative therapies depending on the pathogenetic link of the disease.

Keywords

Osteoporosis, pharmacotherapy, chondroprotectors, pathogenetic factors, osteosclerosis.

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Osteoarthritis is one of the most common diseases among the joints and in most cases leads to disability. Pharmacotherapy of osteoatrosis requires a huge investment. Therefore, the choice of optimal pharmacotherapy for this disease remains one of the most pressing issues. In this pathology, accompanied by pathological damage to the surfaces of the joints, the patient is observed lameness in movement. In most cases, pain on the joint surfaces is observed after physical exertion, as well as redness, swelling in the joint, crepitation when moving the joint. According to the data in the literature, the complex treatment of osteoarthritis: nonsteroidal anti-inflammatory drugs, in contrast to treatment with chondroprotectors, is not sufficiently effective. (1). Such studies have not yet been conducted in our country in the regional context.

The main pathogenetic factors of osteoarthritis are a deficiency of proteoglycan synthesis in the mountain, a decrease in the concentration and breakdown of proteoglycan aggregates, resulting in dehydration of the mountain, imbalance of anabolic and catabolic processes, A2 phospholipase and collagenosis necrofactor, prostaglandin (PG E2) and anti-inflammatory cytokines deficiency predominates, for example, transforming growth factor-va vaplasminogen-1 inhibitor. Osteitis, chondritis, synovitis are common outcomes of inflammation [1.5.11.]. Intensive pathomorphological changes in osteoarthritis are uncle matrix. their strong and elastic surface is roughened. It is manifested by the breakdown of proteoglycan complexes in connective tissue, the biosynthetic activity of chondrocytes decreases, and eventually the main macromolecule - proteoglycans and type II collagen synthesis also decreases. The synthesis of normal connective tissue type I, III, X is enhanced. The uncle matrix synthesized by uncle cells loses chondroitin sulfate and hyaluronic acid [2.10]. In addition, increased production of nitric oxide (NO) stimulates the process of apoptosis of chondrocytes. Deficiency of the proteoglycan matrix develops and the connective tissue loses glycosaminoglycans.

Disorders of uncle products have antigenic properties. The final product enters the synovial fluid, causing synovitis, resulting in disruption of metabolic processes in synoviocytes and decreased formation of endogenous hyaluronate and synovial fluid (Lippielo L.etal., 2000).

Disruption and calcification of the tibial integrity leads to subchondral bone rupture and fragmentation of wound defects as well as detritus formation within the joint [4].

Uncle degeneration and reduction in size are the main pathological changes in this disease. This in turn leads to local strains, the development of osteosclerosis, subchondral cystic changes, and the appearance of osteophytes. Progressive and reactive changes in the bones are accompanied by pathological processes in the joints, joints and muscles, which in turn are accompanied by stereotypes of movement and biomechanical disorders in the joints. The main clinical manifestations of osteoarthritis are pain, deformity, and limited joint movement. The main symptom in this pathology is pain in the joints, the intensity and duration of which varies, which leads to a limitation of functional activity and the full development of the disability [10.15].

According to the data in the literature, the complex treatment of osteoarthritis is not effective enough, despite the complex treatment with nonsteroidal anti-inflammatory drugs, chondroprotectors. Therefore, depending on the pathogenetic link of osteoarthritis requires the study of complex restorative therapies. [6]

Osteoporosis has become one of the most dangerous and threatening health problems. It does not manifest itself for a long time, therefore it is called an “invisible epidemic”, because at an early stage the disease proceeds imperceptibly and painlessly. According to the World Health Organization, osteoporosis ranks fourth in the world in terms of mortality and disability after cardiovascular, oncological and endocrine pathologies. Osteoporosis is a socioeconomic problem and is a major cause of suffering, disability, reduced quality of life and premature death in older people.(7)

All over the world, there is a clear trend towards an increase in the frequency of fractures in osteoporosis. The lifetime risk of hip fractures in women is 15%, approaching the incidence of breast, endometrial and ovarian cancers combined. The lifetime risk of hip fractures in men is 5%, which is close to the incidence of prostate cancer. Hip fractures cause death in 20% of cases, and 50% of survivors remain disabled. Fractures of the vertebral bodies over 60 years old have 25-35% of women and 5-10% of men. In a severe course of the disease, irreversible fragility of bones occurs, whole areas of bone tissue disappear, the bone loses its complex architecture, becomes rarefied and suddenly breaks even in the case of a small load.(8,13) The drama of the problem of osteoporosis is that the frequency of fractures increases significantly with age.

The social significance of this serious disease is due to its manifestations and consequences - fractures of the vertebrae and bones of the skeleton, leading to a significant increase in morbidity, an increase in the incidence of disability and mortality among the elderly, significant costs of treatment, including medical, surgical, orthopedic and rehabilitation.(9,11)

A sedentary lifestyle and low physical activity lead to the fact that metabolic processes in the body slow down, bones become thinner and become fragile. All this ultimately develops into a dangerous disease that leads to disability and death. In order to avoid such a development of events, it is necessary, if possible, to lead a healthy lifestyle, which includes not only rejection of bad habits, but also the use of moderate physical activity, which is a natural regulator of all metabolic processes in bone tissue and contributes to the preservation of bone mass. (10)...

Osteoporosis treatment is aimed at slowing or stopping the loss of minerals and increasing bone density, as well as preventing bone fractures and reducing the pain that is inevitable during the course of the disease.

In this regard, the most promising direction in the complex treatment of osteoporosis is physical rehabilitation (RF), the therapeutic effect of which is based on the close relationship of working muscles with the nervous system, metabolism, and internal organs.(15,12) During movements, the regulation of the body's activity is improved, metabolism, the delivery and use of

oxygen by organs and tissues, blood supply to vital organs is improved, the final metabolic products are more completely removed from the body.

Physical rehabilitation is aimed at stopping the destruction of bone tissue, strengthening it, eliminating pain syndrome, reducing tension from the affected areas and restoring the normal function of joints and bones.

Based on the foregoing, indicating the social and economic significance of osteoporosis in modern society, RF is presented as the most promising non-drug method of treating this disease.(16)

The main objective

of our study is to study the intensity of pain in the dynamics of joint activity on clinical trials and VASh indices to evaluate the effectiveness of using complex physiotherapeutic treatments depending on the stage and clinical features of knee arthrosis.

Materials and methods

The study was conducted in the physiotherapy and traumatology departments of the Bukhara Regional Multidisciplinary Medical Center in patients with osteoarthritis of the knee with clinical, laboratory (general analysis of blood and rheumatoid factor), instrumental (MRI, multispiral computed tomography, ultrasound) examinations. With the consent of 92 patients in the main group and 24 patients in the comparison group, complex rehabilitation was carried out on the basis of a stratified approach to patients aged 35 to 75 years. The number of women in the study group was 56 (82.4%) and that of men was 12 (17.6%). In the comparison group, women accounted for 70.8% and men for 29.2%. It can be seen that in both groups the number of sick women is higher.

The results obtained

The knee joint of patients in the main group had relatively more grade III changes according to the Kellgren-Lawrence X-ray examination data, while the X-ray examination of patients in the comparison group showed more grade II symptoms. Ultrasound examination showed high rates of tendinitis and synovitis in both groups of patients. In the majority of patients in the study group, hypertension and obesity predominated over concomitant diseases, with 87.8% of women diagnosed with hypertension, 67.2% with obesity, and 28.3% with other diseases. In male patients, ischemic heart disease (angina) accounted for 63.2%, hypertension for 44.4%, obesity for 34.7%, and other diseases for 17.5%.

The duration of the disease in the main group of patients was as follows: 27.7% for 1-5 years, 38.4% for 5-10 years, 33.9% for 10 years and more, and 31.3% for patients in the comparative group for 1-5 years, 5 Up to 10 years was 52.4%, 10 years and more was 16.3%. A correlation was observed between the radiological signs of the disease and the duration of the disease. The main clinical signs in patients were pain and joint dysfunction, the intensity of the pain syndrome was determined on the visual-analog scale (VASh), the severity of functional disorders was determined by the summary index of osteoarthritis WOMAC.

Patients in the study group underwent pulse wave therapy (acoustic pulse 16-25 Gts) once every 3 days, 6 treatments per course, electrophoresis with caripain drug current 10-20 mA, 20 minutes, 12-15 treatments. Exercise therapy was recommended for patients with obesity from co-morbidities. Patients in the comparison group underwent magnetotherapy, electrophoresis with lidocaine, and laser therapy.

In patients in the control group, the average duration of treatment was 10–12 days, with a positive clinical outcome of 18–20 weeks. In the main group of patients, the course of treatment was similarly averaged 10–12 days, with clinical efficacy observed on average 24–25 weeks.

Conclusion

The combined use of shock wave therapy and caripain electrophoresis in patients with knee

osteoarthritis has been shown to be highly effective and pathogenetically based treatment. When electrophoresis is applied with caripain, an enzyme depot is formed under the skin in the area where the pathological process occurs, and the therapeutic effect is maintained for 2-3 weeks after the end of the treatment. Pulse wave therapy is a highly effective treatment for various orthopedic disorders, which leads to a reduction in the duration of treatment due to improved metabolism in the affected area, increased tissue and vascular regeneration.

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