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Basics Of Physiotherapy In Diseases Of The Musculoskeletal System.

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ABSTRACT

The development of dysfunctions of the musculoskeletal system can significantly impede the vital processes of the body. Due to the high frequency of the spread of this pathology, a search is under way for its correction. Researchers pay much attention to studying the effects of physiotherapy in diseases of the musculoskeletal system. As a result of observations, it became clear that from the first days of the appearance of the pathology of the musculoskeletal system, the patient can be prescribed physiotherapy. An important factor in the early period is the irradiation of various types of waves. Electrophoresis is shown to reduce pain. It is advisable to assign amplipulse therapy and diadynamic therapy to problem areas. In the early stages also use an alternating magnetic field on the affected joint. Ultrasound and electrophoresis are used to prevent ankylosis and contractures. With the development of a purulent inflammatory process after evacuation of the exudate from the cavity of the joint, erythemal ultraviolet irradiation of the joint is carried out. When sluggish processes of repair shows the effect of ultrasound on the fistulous mouth. Under these conditions, ultrahigh-frequency therapy, darsonvalization of the wound surface, and franklinization are also used. After the subsidence of acute events, radon, hydrosulphuric, sodium chloride baths are prescribed, with the formation of contractures, mud therapy, paraffin and ozocerite applications, therapeutic gymnastics in the pool and neuromuscular stimulation are performed.

Keywords: musculoskeletal system, physiotherapy, rehabilitation, arthritis, arthrosis.

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INTRODUCTION

The development of various dysfunctions can significantly impede the vital processes in the body [1-3]. The formation of disorders can disrupt all systems of the body [4,5]. In a modern person, the locomotor system may very often suffer, impairing the ability to move [6,7]. In connection with the high frequency of the spread of this pathology, the search for approaches to its correction, which occurs in different planes, is relevant [8,9]. For this reason, much attention is paid by researchers to finding options for physiotherapy in diseases of the musculoskeletal system [10,11]. Physiotherapy in this pathology usually complements other types of treatment, but in some cases it can become the leading therapeutic method alternative to drug therapy [12,13]. Given this, the goal is set in the work: to consider the basics of physiotherapy in diseases of the musculoskeletal system.

In arthritis with a pronounced exudative component in the subacute stage, ultraviolet irradiation of the affected joints (at the same time no more than two) is prescribed in 1-2 days (with an increase of 1-2 biodoses); only 3-4 exposures of each joint. With the prevalence of proliferative changes in the affected joints and periarticular tissues using ultrasound exposure, hydrocortisone phonophoresis, for a course of 10-12 procedures daily or every other day [14]. Patients with chronic arthritis are prescribed balneotherapy: hydrogen sulphide, sodium chloride, iodine-bromine and radon baths, as well as mud therapy (appliqués in the form of trousers, half-crotch - for lesions of the joints of the lower extremities, in the form of a jacket, half-jackets - for lesions of the joints of the upper limbs), medical gymnastics and massage [15].

In arthritis, even against the background of acute phenomena, ultraviolet irradiation can be used in erythemal doses at intervals of 2–3 days (with 1-2 biodoses added), only 3–4 irradiations of each affected joint. In the future, with exudative-proliferative changes in the joints, ultrahigh-frequency therapy is prescribed (power 30-40 W, duration of daily procedures 10-15 minutes 10-12 procedures per course). With the prevalence of proliferative and fibro-destructive changes, inductothermy and microwave therapy is applied to the affected joints and the lumbar region. In chronic arthritis with pain syndrome, joint contractures, treatment with pulsed currents is prescribed [16].

In chronic arthritis, balneotherapy and mud therapy (hydrogen sulphide or radon baths, for a course of 12–14 baths; mud applications, 10–12 procedures) in combination with massage, therapeutic exercises, and mechanotherapy are also indicated.

During exacerbation of chronic arthritis, ultraviolet irradiation of the affected joint has anti-inflammatory and analgesic effects, ultra-high-frequency therapy is also advisable. At the early stage of reactive arthritis, ultraviolet irradiation of the joints is shown in erythemal doses after 1-2 days with an increase of 1-2 biodoses (for a course of 3-5 sessions), as well as ultrahigh-frequency or microwave therapy. With the prevalence of arthralgia using ultrasound, ulgranofonoforez hydrocortisone on the affected joints (but 3-5 minutes for each joint every other day, 6-10 procedures per course). With minimal activity of the process prescribed gymnastics, massage, radon, sodium chloride baths lasting 10-12 minutes every other day, for a course of 10-12 baths. In the remission phase, mud therapy, calcium electrophoresis and salicylate electrophoresis, and general ultraviolet irradiation are performed [17, 18].

In rheumatoid arthritis, high-frequency electrical currents have a pronounced therapeutic effect on the ThX-LII segments and on the joints. You can also use in this case, microwave therapy or ultraviolet radiation. If there are contraindications for these treatment methods, electrophoresis of acetylsalicylic acid (0.5-1% solution), analgin (2-5% solution), sodium salicylate (2-5% solution), novocaine (5% solution) is used, and in degenerative changes in the joints - electrophoresis of hyaluronidase, lipid, ronidase in a 1% solution of novocaine. A good effect is the use of ultrasound on the joint area and the paravertebral reflexogenic zones in patients with predominantly proliferative changes of the joints. With minimal activity of the process and pronounced arthralgia, proliferative phenomena, contractures, amplipulseration and diadynamic therapy, as well as diadynamophoresis of analgesic drugs are shown. Balneotherapy, including radon, hydrogen sulfide, sodium chloride, iodine-bromine baths are also widely used [19].

The inflammatory process in the spine and joints in ankylosing spondylitis has a pronounced effect of high-frequency and microwave therapy on the segments of ThX-LII, as well as on the region of the spine and joints. In the inactive phase and with minimal activity of the process, ultrasound therapy and

ultraphonophoresis of hydrocortisone are shown, carried out paravertebrally and on the affected joints. In severe spastic condition of muscles, contractures, pain syndrome use amplipulse therapy and diadynamic therapy, electrophoresis of novocaine (2-5% solution) and iodine (potassium iodide 1-5% solution) according to the general method, on the region of the spine and on the affected joints (duration 15-20 minutes, for a course of 15-20 procedures). Also shown are applications of Dimexidum (50% aqueous solution), as well as heparin (250 U/ml), analgin (0.025 g/ml), hydrocortisone (0.75 mg/ml), nicotinic acid (0.4 mg/ml), therapeutic exercises and massage [20].

Of the balneotherapy procedures, the most important are radon and hydrogen sulfide baths; in case of marked dysfunction of the musculoskeletal system, mud cure is shown, as well as paraffin and ozokerite applications, therapeutic exercises and massage [21].

In traumatic arthritis, ultra-high-frequency therapy is used from the second day after injury, and from 1-6 day - high-frequency therapy (inductothermia) and microwave therapy. In case of severe arthralgia, from the second or third day, ultraviolet radiation is applied to the joint in an erythemal dose, as well as amplipulse therapy, diadynamic therapy and interference currents (100-200 Hz). In order to normalize micro-circulation and reduce edema, it is possible to use an alternating magnetic field (50 Hz) in a constant or intermittent mode. On the 5th-7th day, an ultrasonic effect on the joint is shown, and with manifestations of synovitis - hydrophorisone ultraphonophoresis. In order to resorb the exudate and prevent the development of contractures, electrophoresis of novocaine (2-5% solution), potassium iodide (3-5% solution), lidase, hyaluronidase is carried out. At the final stage, applications of mud, paraffin and ozokerite are used, as well as hydrogen sulfide, slag, sodium chloride, iodine-bromine baths in combination with massage, therapeutic exercises and mechanotherapy [22].

With periarthritis, which is often combined with tendovaginitis, ultraviolet irradiation of the joint, a Solux lamp or infrared rays is shown (for 20-30 minutes 1-2 times a day, for a total of 8-10 procedures). Paraffin baths provide a good therapeutic effect in traumatic periarthritis. In subacute periarthritis, iodine-novocaine electrophoresis is shown, as well as electrophoresis of lidaza, ronidase, hyaluronidase, the use of ultrasound and phonophoresis of drugs (hydrocortisone, aminophylline, gangleron). In the treatment of periarthritis, low-frequency currents are widely used - amplipulse therapy, diadynamic therapy with localization to the joint area and paravertebral. Balneotherapy procedures show radon and hydrogen sulfide baths, with pronounced contractures - mud therapy, paraffin and ozokerite applications [23].

With calcaneal spurs, phonophoresis of hydrocortisone is used, analgin on the calcaneal area (8-10 minutes daily, only 10-12 procedures), electrophoresis of lidase, ronidase, iodine (5% solution) and novocaine (5% solution). To relieve pain syndrome, amplipulse therapy and diadynamic electrophoresis of analgin (5% solution), novocaine (2-5% solution) with epinephrine solution at a dilution of 1: 1000, ultra-high-frequency and microwave therapy are used. In case of attachment of neuritis of the branches of the tibial or sural nerve, ultraviolet irradiation of the lateral surfaces of the foot and the posterior surface of the tibia is used. After the subsidence of acute manifestations, paraffin applications are prescribed [24].

Physiotherapy treatment of osteoarthritis is aimed at unloading the affected joints, improving metabolism, blood circulation in the articular tissues, reducing the effects of reactive synovitis. In the initial stages of the disease, when the symptoms of synovitis are absent or mild, high-frequency therapy (inductothermia) and microwave therapy in the joint area, as well as ultrasound and phonophoresis of drugs (analgin, hydrocortisone) are used daily or every other day. A pronounced analgesic effect has low-frequency impulse currents - amplipulse therapy and diadynamic therapy, as well as diadynamic electrophoresis of novocaine, analgin. Also shown is electrophoresis on the joint area of analgin (2-5% solution), sodium salicylate (2-5% solution), novocaine (0.25-2% solution) in combination with epinephrine (1: 1000). With exacerbation of secondary synovitis and pronounced movement disorders, ultraviolet irradiation, ultra-high-frequency therapy, and exposure to an alternating magnetic field are performed. After that, radon, sodium chloride and bromine baths, common and chamber hydrogen sulfide baths are prescribed, mud therapy, paraffin, ozokerite and mechanical therapy are widely used [25].

The basic principles and methods of physiotherapy treatment of osteochondrosis correspond to those in osteoarthrosis, differing only in some features of the methods of using physical factors depending on the localization of the pathological process. Usually affect the corresponding segment of the spine or

paravertebral. So, ultrasound exposure and ultraphonophoresis of medicinal substances (one of the most effective therapeutic methods for this pathology) is carried out only paravertebral. The more acute the pain syndrome, the less should be the dose of exposure during microwave therapy, amplipulse therapy, diadynamic therapy. Mud therapy should be carried out by the "lightweight" method, especially on the cervical spine. In the treatment of this pathology, a special place is occupied by the so-called extension therapy - underwater static and dynamic orthotraction, or underwater spinal traction, in mineral water. Especially shown is a dynamic orthotraction, which in addition to decompression has a training effect on the spinal muscular system, enhancing its corset function, improves the locomotor function of the articular apparatus [26,27].

The tasks of physiotherapeutic treatment and rehabilitation of patients operated on the joints include, first of all, reducing the intensity of pain syndrome, stimulating regeneration processes, preventing the development of inflammatory infectious processes with the fullest possible restoration of locomotor function of the musculoskeletal system [28-30].

CONCLUSION

From the first days of the appearance of the pathology of the musculoskeletal system, the patient may be prescribed physiotherapy. An important factor in the early period is the irradiation with waves of different lengths. Electrophoresis is especially indicated to reduce pain. It is advisable to assign amplipulse therapy and diadynamic therapy paravertebral to the corresponding segment of the spine. In the early stages of the pathological process, use an alternating magnetic field on the affected joint. Ultrasound and electrophoresis of lidase, ronidase are often used to prevent ankylosis and contractures. With the development of a purulent inflammatory process after evacuation of the exudate from the cavity of the joint, erythemal ultraviolet irradiation of the joint is carried out. In the case of sluggish reparation processes, the effect of ultrasound on the fistulous mouth is shown. Ultrahigh-frequency therapy, darsonvalization of the wound surface and franklinization are also used. After the subsidence of acute events, mechanotherapy is prescribed in combination with radon, hydrogen sulfide, chloride, sodium baths. During the formation of contractures, mud cure, paraffin and ozokerite applications and neuromuscular stimulation are performed.

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