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## **MODERN DIRECTIONS OF PHYSIOTHERAPEUTIC TREATMENT**

In today's conditions, interest in methods of influence by physical factors is growing significantly. There are many contraindications to the use of medicinal products. In such cases, physiotherapy as a method acquires the greatest importance.

*Physiotherapy* (from the Greek "nature" and "to treat") is a means of rehabilitation, which studies the therapeutic effect of natural and preformed physical factors and develops methods of their application with therapeutic and preventive, rehabilitation purposes. Physiotherapy procedures are prescribed taking into account the modern understanding of the etiopathogenesis of the disease, the mechanism of action of the physical factor, accompanying and clinical manifestations of the disease and the stage of rehabilitation. The complex use of medicinal and physiotherapeutic means greatly improves the effectiveness of rehabilitation in the recovery period [1].

*Physiotherapy methods include:* balneotherapy (mineral water treatment, mud treatment); climate therapy (cave treatment, exposure to mountain air); hydro- and thermotherapy (hydrotherapy, thermal treatment); inhalation (treatment through the respiratory tract); mechanotherapy (exercises and procedures using special mechanisms); electro- and phototherapy (treatment with electric current and light); magnetotherapy (treatment with a magnetic field). Let's dwell in more detail on modern methods of physiotherapy treatment [2].

*Transcranial magnetic stimulation (TMS)* is a method that allows to non-invasively stimulate the cerebral cortex using short magnetic pulses. The essence of this method is that under the influence of a strong magnetic field, the membrane of nerve cells of the cerebral cortex is depolarized [3; c.48].

*Magnetotherapy* is a therapeutic and preventive method, the essence of which is to influence the body with a variable magnetic field. The effectiveness of the procedure is due to the natural biological property of our body. Violation of our internal magnetic field leads to various diseases, deterioration of psycho-emotional and physical condition, and thanks to such "recharging" as magnetic therapy, the body is gradually restored and well-being improves. Magnetotherapy is considered the most gentle and delicate procedure, easily tolerated and does not cause painful sensations, which allows it to be widely used as a basic, additional or alternative to drug therapy [4; c.35].

*Functional magnetic stimulation (FMS therapy)* is a method of nerve myostimulation. This action allows to stimulate the deepest muscles of the pelvic floor that are inaccessible to other forms of influence. Muscles are toned, activated and restored, blood supply and lymphatic drainage are improved, metabolic processes are accelerated.

Indications for magnetic stimulation:

- diseases of the musculoskeletal system (osteochondrosis, radiculitis, arthritis, arthrosis, fractures, sprains, injuries)
- cardiovascular system (angina, hypertension, ischemic heart disease, arrhythmia, vascular disease, venous insufficiency);

- neurological diseases (vegeto-vascular dystonia, sleep disorders, atherosclerosis, neurosis, asthenic syndrome, headache, post-stroke conditions, neuralgia, etc.);
- gastrointestinal tract (gastritis, cholecystitis, spastic colitis, gastric ulcer);
- diseases of the digestive system (ulcer disease, gastritis, pancreatitis, biliary tract dyskinesia);
- urological and gynecological diseases (urethritis, cystitis, pyelonephritis, inflammation of the appendages, prostatitis, impotence, infertility, pelvic organ prolapse);
- respiratory diseases (bronchitis, sinusitis, pneumonia);
- dermatological diseases (psoriasis, allergies, eczema, shingles, neurodermatitis, burns)

Contraindication: presence of a pacemaker; severe heart failure; blood diseases, tuberculosis (acute stage), acute thrombosis, aortic aneurysm, hyperthyroidism, menstruation, pregnancy; malignant neoplasms; acute liver, kidney or lung failure; acute myocardial infarction, severe angina pectoris.

*Tekar therapy (endothermic therapy)* is an effective technology that stimulates the processes of regeneration and restoration of muscles, tendons, ligaments and fascial tissue, eliminates pain, restores the natural range of motion after injuries and diseases of the musculoskeletal system. During the therapy, a high-frequency current is applied, which is not felt by the patient. It penetrates the tissues in the form of electromagnetic energy and turns into heat there, deep warming occurs.

Diseases where tekarak apparatus is effective: neuralgia, osteochondrosis, bursitis, osteoporosis, arthrosis, epicondylitis and others.

The procedure has contraindications: presence of pacemakers, hearing aids, metal prostheses, and others; pregnancy, tumors, or open wounds. Therapy is not performed in the areas of the heart and head [3; c.48].

*Ultrasound therapy* is a medical physiotherapeutic procedure using ultrasound waves of different frequencies from 20 to 3000 kHz. Ultrasounds cause compression and stretching of tissues, thereby stimulating regenerative processes. Ultrasound therapy has a pronounced analgesic, antispasmodic, anti-inflammatory, desensitizing effect.

Indications for ultrasound therapy:

- diseases of the musculoskeletal system (osteochondrosis, radiculitis, spinal injuries, arthritis, arthrosis, bursitis, epicondylitis, condition after injuries, Bekhterev's disease, rheumatoid arthritis);
- injuries and diseases of the peripheral nervous system (neuritis, neuropathy, neuralgia, nerve injuries);
- adhesions, scar processes, contractures, colloid scars;

Contraindications: heart failure, presence of metal prostheses, acute inflammatory and infectious processes, blood diseases, tendency to bleeding, pregnancy, malignant tumors [4; c.52].

*Vibrotraction (traction, stretching of the spine)* is a highly effective method of treatment that has both an immediate pain-relieving and a long-term therapeutic effect on areas of degenerative and compressive lesions of the spine.

Indications for vibrotraction:

- acute and subacute pain syndrome arising as a result of compression;

- neurodystrophic processes: osteochondrosis, spondyloperiartrosis, spondylosis;
- protrusions and intervertebral hernias;
- neurovascular and neurotrophic disorders;
- reflex muscle-tonic pain;
- radiculo-ischemic syndromes with slow progress;

Contraindication: violation of blood circulation in the spinal cord; infectious diseases of the membranes of the spinal cord; instability of vertebrae; spinal cord compression syndrome; herniated discs with loss of elements into the lumen of the spinal canal, scoliosis in childhood; systemic diseases of bone tissue (osteoporosis, myeloma disease); acute diseases of the gastrointestinal tract; pregnancy; tumors and metastasis [4; с.79].

After analyzing the professional literature and understanding the importance of physiotherapy, we can conclude that it needs to be developed. However, the use of medicines and physiotherapy methods today does not always provide an opportunity to obtain a long-term therapeutic effect in a significant group of patients. Therefore, the development of new and combined methods of treatment, which mutually strengthen and potentiate the therapeutic effect of each other, are quite promising directions for further research. Thus, in the field of restorative rehabilitation, there is the development of treatment complexes using physiotherapy methods. Such forms of treatment are prescribed taking into account the etiology, pathogenesis, features of clinical manifestations, form and stage of the disease, which allows to reduce economic costs for the rehabilitation of the specified group of patients.

## REFERENCES

1. Фізична, реабілітаційна та спортивна медицина: нейрореабілітація: нац. підруч.: [для студентів та лікарів] / за заг. ред. проф. В.М. Сокрута ; Всеукр. асоц. фізіотерапевтів та курортологів [та ін.]. – Слов'янськ; Тернопіль; Київ: Друкарський двір, [20--]. – (Національний підручник). Т. 2 / [В. М. Сокрут та ін.]. – 2020. – 337 с.
2. Практична фізіотерапія: навч. посіб. / [В.О. Калугін, В.Г. Глубоченко, Л.Д.Кушнір та ін.]; ред. В.О. Калугін ; М-во охорони здоров'я України, Центр. метод. каб. з вищ. мед. освіти , Буковин. держ. мед. акад. – Чернівці : Прут, 1998. – 232 с.
3. Фасахова С.М. Сучасні напрямки фізіотерапевтичного лікування / С.М. Фасахова, В.І. Горошко // Клінічна та профілактична медицина. – 2022. – №3. – С. 48-54.
4. Фізіотерапія: підручник для студентів вищих медичних навчальних закладів / В.Д. Сиволап, В.Х. Каленський; ЗДМУ. – 3.: ЗДМУ, 2014. – 196 с.