

APPLICATION OF THE FRANKLINIZATION METHOD FOR MEDICAL
PURPOSES

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Abstract. *Franklinization is intended for the therapeutic effect of a constant high-voltage electric field, a “quiet” electric discharge and a flow of negative ions. It is used in the treatment of functional diseases of the nervous system (headache, insomnia, itching, decreased skin sensitivity, long-term non-healing wounds or ulcers and other diseases). Makes it possible to carry out procedures as general, and local franklinization.*

Keywords: *franklinization, positive , negative ions, electrons, light ions, heavy ions, aeroion therapy, therapeutic effect, air ionizer.*

Introduction.

Under terrestrial conditions , the air almost always contains a certain amount of ions due to natural ionizers, mainly radioactive substances in the soil, gases, and cosmic radiation. Ions and electrons in the air can, by joining neutral molecules and suspended particles, form more complex ions. These ions in the atmosphere are called air ions. They differ not only in sign, but also in mass; they are conventionally divided into light (gas ions) and heavy (suspended charged particles of sand, particles of smoke and moisture) [1].

Heavy ions have a harmful effect on the body. Light and mostly negative air ions have a beneficial effect, they are used in particular, for treatment – aeroionotherapy. There is natural aero onotherapy associated with the patient’s stay in natural conditions with natural air ionization (mountain resorts, waterfalls, forest air). Changes in the ionic composition of air are associated with solar activity, probably one of the reasons for the influence of the Sun on terrestrial biological organisms. Artificial special air ionizer devices, which can be any air ionizer that creates ions in the air. However, when used for medicinal purposes, it should not cause harmful side effects on the body. A type of artificial aeroion therapy is an electrostatic shower (franklinization) [2-3] . During franklinization, a constant high voltage electric field is used. (up to 50 kV). The resulting air ions and a small amount of ozone have a therapeutic effect. Franklinization is carried out in the form of general and local procedures. During general franklinization, the patient sits on an isolated wooden chair with a metal plate connected by the positive pole of the device. An electrode in the form of a “spider” is installed above the patient’s head at a distance of (10÷15) cm , connected to the negative pole of the device. Under the influence of an electric field, polarization occurs in the dielectric faces , microcurrents arise in conductive tissues, and static charges are formed on the surface of the body [4-5] .

A quiet electrical discharge that occurs near the tips of the head electrode creates a flow of ions directed to the patient’s body, mainly in the area of his head and neck. Aeroions act on the nerve endings embedded in the skin of this area, as well as on the receptors of the mucous membranes when inhaling ionized air. These phenomena underlie the primary effect of a high-voltage electric field on the body. **Franklinization** or “ **electrostatic shower** ” is one of the oldest methods of electrotherapy, apart from the use of electric fish , still used today. The

constant electric field during the general exposure procedure can reach 50 kV, with local exposure (15 ÷ 20) kV.

Mechanism of therapeutic effect.

The franklinization procedure is carried out using an apparatus for franklinization and aeroionization Af-5-5 : Maximum output voltage (with a load resistance of 2500 MOM) 50 kV. Power supply from AC mains voltage 220V. Power consumption no more than 150 watts.

The number of steps for adjusting the current voltage is -10, so that the patient's head (with general exposure) or another part of the body (with local exposure) becomes like one of the capacitor plates, while the second is an electrode suspended above the head or installed piled above the impact site at a distance of (6 ÷ 10) cm. The role of a dielectric is played by the air between them. Due to the fact that the body's resistance to air resistance is small, almost all of the voltage generated by the device falls on the air gap between the patient's body and the electrode. However, air with such a small gap is not an absolute insulator.

Under the influence of high voltage under the tips of the needles attached to the electrode, air ionization occurs with the formation of air ions, ozone and nitrogen oxides. In tissues located opposite the electrodes, under the influence of the same voltage, polarization occurs. formation of tissue dielectric molecules and a microcurrent appears in areas with good electrical conductivity, as well as changes in the normal ratio of ions in the tissues of the area affected by the sensitive trigeminal nerve and the collar region. Inhalation of ozone and air ions causes a reaction in the vascular network. After a short-term spasm of blood vessels, capillaries expand not only in superficial tissues, but also in deep ones.

Results and discussion.

As a result, metabolic and trophic processes are improved, and in the presence of tissue damage, the processes of regeneration and restoration of functions are stimulated. As a result of improved blood supply, normalization of metabolic processes and nerve functions, skin itching, hypertension, Peresthesia . Improving blood supply to the brain and its membranes leads to a reduction in headaches, high blood pressure, increased vascular tone, decreased heart rate. Due to the effect of ozone, ozonides and peroxides on the surface of wounds or ulcers, as well as the activation of tropical metabolic processes in tissues, better cleansing of wounds and ulcers occurs and their healing is accelerated. The duration of procedures carried out daily or every other day is (10 ÷ 15) minutes per course of treatment (10 ÷ 15) effects. During the procedure, patients should not touch any objects or touch anyone.

When carrying out therapeutic treatment, the wound or ulcer surface must be cleaned of pus, rejected masses, crusts treated with appropriate medicinal solutions and dried with a sterile napkin. At a distance of (5-7) cm from the surface of the wound or ulcer, a bracket attached to a coil or chair is fixed electrode. A foot electrode is placed under the corresponding area of the body. For local influences, a voltage of (10 ÷ 20) kV is applied. The duration of the procedures, usually carried out during dressings (after 2 ÷ 3 days), is (10 ÷ 15) minutes, per course of treatment (10 ÷ 15) effects. At the end of the procedure, turn off the voltage regulator. After this, the patient can get up from the couch or chair. The use of general franklinization is indicated for functional disorders of the nervous system : neurasthenia with asthenic syndrome, migraine, insomnia, physical and mental fatigue and overwork , residual effects of arachnoiditis.

Conclusion.

Local franklinization is used for trophic ulcers, infected wounds with a sluggish course, burns, local itching, and peresthesia.

Contraindications: systemic blood diseases, malignant neoplasms, severe cerebral atherosclerosis, cerebrovascular accidents, febrile conditions, pregnancy, active pulmonary tuberculosis.

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