



# **OZONE THERAPY IN THE TREATMENT OF PATIENTS WITH ECZEMA**

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## **Abstract:**

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The article describes ozone therapy techniques used to treat eczema and psoriasis as an adjuvant anti-inflammatory and reparative agent. Parenteral and external use of an oxygen-ozone gas mixture (the so-called medical ozone) is used both in the form of monotherapy and in complex treatment. The proposed systemic and external methods allow differentiated prescribing of ozone therapy depending on the nature and duration of the disease, the activity of the inflammatory process and the presence of concomitant diseases.

**Keywords:** ozone therapy, method, eczema, treatment, psoriasis.

## **INTRODUCTION**

Recently, in everyday medical practice, more and more attention has been paid to non-drug, in particular, physiotherapeutic methods of treatment that can replace or significantly limit the prescription of drugs, since the latter often give undesirable side effects, especially with prolonged and irrational use.

## **MATERIALS AND METHODS**

Ozone therapy has been increasingly used in clinical practice in recent years, including in dermatology and cosmetology [1, 2]. This method is very rich both in the diversity of its sanogenetic effects and in the range of methods for systemic and external use. The systemic effect of ozone therapy is to equalize the balance of pro- and antioxidants in the body, improve oxygen supply and microcirculation, as well as have an immunomodulatory effect. When applied externally, the ozone-oxygen mixture produces a powerful anti-inflammatory, analgesic, antipruritic effect of medical ozone, as well as an oxidative effect, which provides a bactericidal effect.

## **RESULTS AND DISCUSSION**

The leading method of systemic treatment in people suffering from eczema and psoriasis was intravenous drip administration of ozonated saline solution (OSS). As a method of local exposure directly to the skin lesion, flow-through gasification with an ozone-oxygen gas mixture was used. It is carried out using special chambers made of ozone-resistant materials ("caps", "bags" or "boots"). When applying an ozone-oxygen mixture topically, it must be remembered that the bactericidal effect of ozone is manifested only in a humid environment, therefore, before performing the procedure, the surface of the lesion should be moistened with water or saline solution. During the

procedure, the chamber is filled with an ozone-oxygen gas mixture, after which the mixture enters the destructor of the installation. The concentration of ozone gas varied from very high (50-70 mg/l), providing a bactericidal effect, to minimal (2 mg/l), at which the reparative effect of this physical factor is realized. The duration of the procedures ranges from 15 to 30 minutes. After the end of the specified time, before removing the special plastic bag from the limb, it should be purged with oxygen for 5-10 minutes to prevent excess ozone from entering the air of the working room.

It has been established that combined ozone therapy is most effective, i.e., sequential alternating use of systemic and external methods. One block of combined ozone therapy consisted, as a rule, of 1-2 procedures of systemic ozone therapy and 1 procedure of external ozone therapy.

To treat patients with eczema and psoriasis, ozone therapy techniques were used in the following modifications:

- 1) intravenous administration of 400 ml of OPR with an ozone concentration in solution of 2 mg/l 3 times a week, a total of 5-9 procedures per course of treatment;
- 2) flow-through gassing of lesions on the hands and/or feet with an ozone-oxygen gas mixture was carried out in an isolated plastic chamber; ozone was used in concentrations from 2 to 50 mg/l with a duration of procedures carried out 2-3 times a week, 15-30 minutes, a total of 6-9 procedures per course of treatment.

We examined 108 patients with various clinical types of eczema [3]. For the majority of patients (~ 80%), ozone therapy was prescribed in addition to basic drug treatment, which included antihistamines, enterosorbents, and ointments. In the remaining



patients, the ozone-oxygen gas mixture was successfully used as monotherapy (i.e., in combination only with indifferent ointment agents).

Ozone therapy can be used to treat various clinical forms of eczema, regardless of the stage of the disease. It has been established that it has the most favorable effect on the main clinical manifestations of eczema (itching, inflammatory phenomena on the skin, excoriation, etc.). Almost all patients, after 2-4 ozone therapy procedures, experienced visible clinical improvement, expressed in the cessation of itching, the disappearance of weeping and secondary pyoderma rashes, and an improvement in general well-being. Flow-through aeration was equally effective in patients with various forms and stages of the eczematous process - with weeping, skin infiltration, painful cracks, etc.

With a small area of skin damage and the general satisfactory condition of patients, external ozone therapy can be limited. This method is most appropriate for use in dyshidrotic and paratraumatic varicose forms of eczema with limited foci of skin lesions on the extremities, as well as in patients with painful cracks in the lesions and with pronounced symptoms of secondary pyoderma.

If necessary, treatment can be enhanced by systemic ozone therapy procedures in the form of intravenous administration of OPS. It is most advisable to carry out systemic ozone therapy for persons with a long-term disease, widespread skin rashes, severe acute inflammatory phenomena in the lesions and intense itching. Systemic ozone therapy is also indicated for patients with eczematous erythroderma after relief of acute inflammatory phenomena with the help of systemic corticosteroid drugs as a means of urgent therapy.

If this category of patients has polyvalent allergies, side effects of drugs, concomitant diseases that limit the use of drug therapy, it is possible to prescribe an ozone-oxygen mixture as monotherapy - systemically or in combination with external exposure to ozone gas. In general, we noted a positive effect of varying degrees of severity from ozone therapy in 83% of patients with eczema.

It is advisable to prescribe repeated courses of treatment in case of exacerbation of a skin process or for preventive purposes every 4-6 months (i.e. 2-3 times a year). The recommended course duration is 6-7 external ozone therapy procedures or 5-6 systemic ozone therapy procedures. It is allowed to carry out 4-5 blocks of combined ozone therapy procedures.

We observed 208 patients with various clinical types of psoriasis [4]. When conducting ozone therapy, as a

basic technique, they were prescribed systemic ozone therapy in the form of intravenous infusions of OPR 2-3 times a week for a total of 7-9 per course of treatment. Most often, ozone therapy supplemented the basic drug complex, including antihistamines, vitamin preparations of groups A, B and C and external ointments. In patients with rashes on the palms and/or soles, treatment was supplemented with external therapy - flow-through gassing of the lesions with an ozone-oxygen mixture.

The most pronounced clinical effect was observed in individuals with multiple, but small and superficial psoriatic rashes with mild infiltration, distributed over the entire skin and having a relatively short duration of existence (no more than 1-2 months). In this case, their rapid regression was observed after 3-4 procedures of systemic ozone therapy, and by the end of the course of treatment such rashes regressed almost completely. A good clinical effect was also observed in exudative and seborrheic forms of psoriasis

## **CONCLUSION**

Thus, ozone therapy has proven to be a highly effective physiotherapeutic method in the treatment of patients with eczema and psoriasis. When lesions are localized on the extremities (hands and/or feet), it is advisable to start therapy with external methods, which in themselves can be very effective. If patients have widespread acute inflammatory itchy rashes, it is advisable to supplement the treatment complex with systemic ozone therapy.

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