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The effectiveness of ozone therapy used in the prevention of relapse in patients with ophthalmic herpes

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Aim: To research the effectiveness of ozone therapy used in the prevention of relapse in patients with ophthalmic herpes. Recurrent eye herpes, one of the major causes of blindness and low vision and prevention of recurrence is one of the urgent problems of ophthalmology. Ozone therapy is a multi-factor and polysystem treatment method with virtually no side effects.

Material & Methods: 47 patients (47 eyes) with recurrent ophthalmic herpes within the age of 19–58 (41.4±9.5) years were under examination. 25 patients (25 eyes)—the basic group—got the therapeutic ozone in form of intravenous infusions of ozonated balanced salt-solution (BSS); whereas, 22 patients (22 eyes)—the control group—were treated with prophylactic doses of acyclovir.

Results: In the basic group of patients which have got the therapeutic ozone in form of intravenous infusions of ozonated balanced salt-solution (BSS) as an anti-recurrent treatment in combination of traditional treatment, the efficiency of anti-recurrent therapy was higher in 76% of patients (19 individuals out of 25); any aggravation was not noted in follow-up compared with the control group treated with prophylactic doses of acyclovir in the inter-recurrent period as an anti-recurrent therapy–36.3% (eight out of 22 patients) ($p<0.05$). No effect or an increased frequency of recurrences after the treatment was lower in the basic group–8% (two individuals) compared with the control group–40.9% (nine individual) ($p<0.05$). In case of recurrent ophthalmic herpes, the ozone therapy in combination with traditional anti-herpetic treatment has a preventive effect causing a significant reduction in the frequency of recurrences and, as a consequence, extending inter-recurrent period compared with the control group of patients treated with anti-recurrent medicines of the abnormal nucleotides group in remission period ($p<0.05$). According to the results of our study, the dose rate of therapeutic ozone for a prevention of ophthalmic herpes aggravations is 5–9g/l in the form of intravenous infusions of ozonated BSS (at a rate of 7–12 sessions, 2–3 times per week). In addition, a comparative study of the clinical results showed that corneal infiltration resorption in patients of the experimental group was completed earlier than in the control group (respectively: 17.28±0.5 and 20.33±0.6; $p<0.05$). The duration of treatment of the experimental group is shorter than that of the control group (21.2±0.4 and 24.6±0.3; $p<0.05$). The effect of increasing the visual acuity amounted to respectively 0.8±0.09 a 0.65±0.07 ($p>0.05$). As a result of the study, it is also detected that in the basic group after performed anti-recurrent therapy, a reduction of virus level in blood was revealed during investigation of peripheral blood using the method of fluorescent antibody (MFA) in 19 out of 25 patients. In all patients treated with ozone therapy any side effects were not revealed and a good tolerance was noted.

Conclusions: For prevention of ophthalmic herpes recurrences and for an achievement of optimal results of anti-recurrent therapy in patients with recurrent ophthalmic herpes it is indicated simultaneously with the start of standard anti-herpetic treatment to begin courses of ozone therapy and continue it as a mono-therapy after the end of treatment.

Recent Publications:

1. Song M, Zeng Q, Xiang Y, Gao L, Huang J, et al. (2018) The antibacterial effect of topical ozone on the treatment of MRSA skin infection. Mol Med Rep. 17(2):2449–2455.
2. Zeng J and Lu J (2018) Mechanisms of action involved in ozone-therapy in skin diseases. Int. Immunopharmacol. 56:235–241.
3. Smith N L , Wilson A L, Gandhi J, Vatsia S and Khan S A (2017) Ozone therapy: an overview of pharmacodynamics, current research, and clinical utility. Med Gas Res. 7(3):212–219.
4. Wang X, Wang L, Wu N, Ma X and Xu J (2015) Clinical efficacy of oral ganciclovir for prophylaxis and treatment of recurrent herpes simplex keratitis. Chin. Med. J. (Engl) 128(1):46–50.
5. Nataneli N, Chai J S, Donnenfeld E D and Perry H D (2013) Recurrent herpes simplex keratitis adjacent to femtosecond

laser arcuate keratotomies. JAMA Ophthalmol. 131(10):1372.

Biography

Guliyeva M H has completed his PhD from Moscow Research Institute of Eye Diseases named after Helmholtz in Russia. She is Head of the Department of Infectious Eye Diseases of the Azerbaijan National Center of Ophthalmology named after academician Zarifa Aliyeva in Baku, Azerbaijan. She has published more than 40 articles in well-known journals.

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