

CLINICAL AND LABORATORY EVALUATION OF LOCAL OZONE THERAPY DURING ADAPTATION TO COMPLETE REMOVABLE DENTURES IN ELDERLY PATIENTS

Yakubova N.N

Aliev N.Kh.

Bukhara State Medical Institute named after Abu Ali ibn Sina, Bukhara, Uzbekistan

Background. *Population aging has led to a steady increase in the prevalence of complete edentulism among elderly individuals, making complete removable dentures one of the most widely used methods of prosthetic rehabilitation. However, adaptation to complete dentures in elderly patients is often complicated by age-related changes in oral tissues, impaired salivary function, reduced regenerative capacity of the mucosa, and disturbances of oral microflora. These factors contribute to prolonged adaptation periods, discomfort, and a high incidence of inflammatory complications, including denture-related stomatitis.*

Keywords. *Complete edentulism; elderly patients; complete removable dentures; ozone therapy; ozonated olive oil; adaptation; oral hygiene; oral microflora.*

Aim. To evaluate the clinical and laboratory effectiveness of local ozone therapy during the adaptation period to complete removable dentures in elderly completely edentulous patients in comparison with conventional prosthetic treatment.

Materials and Methods. The study was conducted as a comparative dynamic observational investigation involving elderly patients with complete edentulism who underwent prosthetic rehabilitation with complete removable acrylic dentures. Patients were divided into a control group receiving conventional prosthetic treatment and a study group receiving conventional treatment combined with local ozone therapy using ozonated olive oil applied to the tissue-contacting surface of the denture.

Patients were followed for 6 months. Denture hygiene was assessed using the Ambjørnsen index. Subjective complaints were evaluated using structured questionnaires at early adaptation stages. Functional parameters of mixed saliva (secretion rate, pH, viscosity) were measured dynamically. The condition of oral microflora, including *Candida* spp. colonization, was assessed using microbiological methods. Statistical analysis was performed using non-parametric tests with a significance level of $p < 0.05$.

Results. In the control group, denture hygiene deteriorated significantly from the second week of denture use, with progressive worsening observed throughout the follow-up period. Salivary parameters demonstrated transient changes, followed by a tendency toward hyposalivation during long-term observation. Microbiological analysis revealed signs of dysbiosis and the presence of *Candida* spp. in a subset of patients. Subjective complaints such as pain, foreign body sensation, speech disturbances, and mastication difficulties persisted for up to 2–3 weeks, contributing to prolonged adaptation.

In contrast, patients receiving local ozone therapy demonstrated significantly better preservation of denture hygiene indices throughout the observation period. No laboratory signs of *Candida* infection were detected in this group. Salivary parameters remained within physiological limits, indicating preservation of oral functional homeostasis. The intensity and duration of subjective complaints were significantly reduced, particularly during early stages of adaptation. Overall, the average adaptation period in the ozone therapy group was reduced by approximately 30% compared to conventional treatment.

Conclusion. Local ozone therapy using ozonated olive oil represents a clinically effective and pathogenetically justified adjunctive method for improving adaptation to complete removable dentures in elderly patients. Its use contributes to improved denture hygiene, stabilization of oral microflora, reduction of inflammatory manifestations, and faster relief of subjective discomfort without adverse effects on salivary function. Incorporation of local ozone therapy into prosthetic rehabilitation protocols may enhance treatment outcomes and quality of life in elderly edentulous patients.