

# **KHARKIV NATIONAL MEDICAL UNIVERSITY**

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## **PROPERTIES OF NEW GLASS-IONOMER CEMENT FOR PERMANENT FIXATION OF NON-REMOVABLE DENTURES**

Background. According to literature, the development and evolution of glassionomer cements began on beginning of 1970s [3], which were taken from silicate and zincpolycarboxylate cements. Glass ionomer cements represent a system of «powder / liquid». According to literary sources it is known that their composition includes: powder - calcium - aluminosilicate glass with the addition of fluorides (up to 23%). The liquid contains of polycarboxylic acids: polyacrylic, polyacetate and polyamelic.

These cements have low toxicity, high durability and good aesthetic characteristics, and also protection from caries process property [1]. Based on these, polycarboxylate cements quickly became popular in use as cements for fixing structures, but due to high solubility of unsatisfactory mechanical properties caused by residual zinc oxide did not become widespread in other dentistry [2].

The purpose of investigation. Comparative evaluation of clinical and technological properties of new glassionomer cement for permanent fixation of unremovable structures with its foreign analogues.

Results of investigation. The research was conducted on the base of Research laboratory of dental materials of JSC «STOMA» where experiments were conducted to establish such indicators as: view of the material, time of mixing, working time, period of hardening, the thickness of membrane. In studying these, we relied on indicators of international standards ISO 9917.

The view of our cement and analogues «KetacCem» and «Riva», it was found that the powder does not contain foreign impurities, and the liquid does not contain sediment, another impurities and signs of gel formation. Determination of such parameters as mixing time, working time and period of hardening showed that the glass ionomer materials selected by us for comparison have indicators within the limits recommended by international standards ISO 9917. The membrane thickness of our cement for

permanent fixation has ( $0,18 \pm 0,07 \mu\text{m}$ ), which is ( $0,08 \pm 0,02 \mu\text{m}$ ) more than thickness of «KetacCem», which is ( $0,10 \pm 0,05 \mu\text{m}$ ), and ( $0,05 \pm 0,04 \mu\text{m}$ ) the «Riva», respectively.

Conclusion: Glassionomer cements are in constant evolution and are one of the materials that are best suited for the final stage of orthopedic treatment - fixing removable dentures with permanent cement.

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### **THE IMPORTANCE OF CONDUCTING MICROBIOLOGICAL STUDIES OF THE MICROFLORA OF THE NOSE AND PHARYNX IN THE TREATMENT OF VARIOUS FORMS OF ODONTOGENIC MAXILLARY SINUSITIS**

Introduction. The pathological process of the upper respiratory tract, in particular the paranasal sinuses, in our days is one of the most common in dental surgeons and ENT-specialists practice. It should be emphasized that a rather high percentage of the treatment frequency of patients with various forms of odontogenic maxillary sinusitis (OMS) is observed in the Kharkiv region, which accounts for 35% of all inflammatory diseases of the maxillofacial region.

In the pathogenesis of the development of OMS, there are numbers of components play an important role: odontogenic factor, anatomical structural features of the sinuses and alveolar processes of the upper jaw, timely treatment of the patient by a specialist. An important condition in the development and course of the disease is the bacterial factor. The study of the spectrum of pathogens of various forms of OMS remains an urgent and necessary stage for the subsequent correct comprehensive treatment, including the use of antibacterial drugs with a directed spectrum of action.

The aim of our study was to study the spectrum of pathogens in various forms of OMS.

Materials and methods. The study group included 40 patients with various forms of odontogenic maxillary sinusitis who were treated at the clinical department of the Kharkiv Regional Clinical Hospital in the period of 2017-2019. All patients were