

**ALL UKRAINIAN SCIENTIFIC AND
PRACTICAL ABSENTEE CONFERENCE
WITH INTERNATIONAL PARTICIPATION
“POLTAVA’S DAYS OF PUBLIC HEALTH”
MAY 28, 2021, POLTAVA, UKRAINA**

DOI: 10.36740/WLek202106144

THE USE OF VARIOUS DESENSITIZERS IN THE TREATMENT OF DENTAL HYPERESTHESIA

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Introduction: Hypersensitivity of enamel and dentin from various irritants still remains a pressing problem in dentistry. There is no single reason for the sensitivity of the hard tissues of the tooth, but the literature describes the factors that contribute to its occurrence. The tooth becomes sensitive to stimuli after the enamel is lost or the root surface is damaged. Enamel loss can occur due to occlusal abrasion, cervical abrasion, or chemical erosion.

Dentin sensitivity is associated with the movement of dental liquor through the dentinal tubules. Sometimes, dentin can increase the degree of mineralization, but in most cases requires active intervention from the outside.

The aim: The aim of our study was to conduct a comparative description of the action of different groups of desensitizers used in the clinic of therapeutic dentistry in the treatment of hypersensitivity of the teeth.

Materials and methods: Treatment of hypersensitivity of the hard tissues of the teeth was performed in 45 patients aged 18 to 45 years using desensitizers of different groups. Evaluation of the effectiveness of the drugs was performed 20 minutes and 10 days after use.

Results: In 8 patients (group 1) we used unfilled desensitizers containing HEMA without glutaraldehyde. HEMA is able to bind to dentin collagen, narrowing or closing the lumen of the dentinal tubules. We used AquaPrep F (BISCO, USA) in our research. According to the results obtained in 5 patients, the decrease in sensitivity occurred after the first session. In 3 patients after 5 visits.

5 patients (group 2) used unfilled desensitizers containing HEMA and glutaraldehyde, which causes precipitation (coagulation) of proteins in the dentinal tubules, and HEMA helps it to penetrate deeper (up to 200 µm). We used Cluma Desensitizer (Heraeus Kulzer, Germany) for our study. A positive result was obtained in 5 patients after two visits.

In 6 patients (group 3) used a filled desensitizer containing HEMA with nanofiller (particle size = 7 nm) based on compomer. This desensitizer is not able to penetrate deep into the dentinal tubules and form a tight layer of resin on the surface of the dentin. In our study, we used SealAProtect (Dentsply). Tooth sensitivity in patients in this group decreased immediately after dental treatment, but reappeared after 10 days.

8 patients (group 4) used the 7th generation Butler Protect adhesive system (JO. Butler, USA). In 6 patients the sensitivity disappeared after the 2nd visit, and in 2 patients - after the fourth visit.

In 8 patients (group 5) to reduce the sensitivity of the teeth, we used a synthetic varnish Dentin-Protector (Ivoclar). The use of Dentin-Protector (Ivoclar) varnish reduced the sensitivity of dentin patients at the first visit, but after a month 5 patients regained hypersensitivity.

In 10 patients (group 6) we used the drug «Gluftored» (Vladmyva), which is used for deep fluoridation of enamel and dentin. It consists of a liquid with fluorine and copper ions and a suspension of calcium hydroxide in distilled water. The use of «Gluftored» allowed to reduce the sensitivity of the teeth in the first visit, even after the treatment of teeth under ceramic crowns. One month later, only one patient had hyperesthesia.

Conclusions: Thus, given the large number of desensitizers in the dental market, the doctor must select a desensitizer depending on the clinical situation. In this case, the hypersensitivity of the enamel and dentin in the patient can be minimized and completely cured.

KEY WORDS: desensitizer, hyperesthesia of enamel, hyperesthesia of dentin.