

NEW ALGINATE DENTAL IMPRESSION MATERIAL WITH DECONTAMINATIVE EFFICIENCY

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Dentists belonging to the group of high professional risk regarding the incidence of hepatitis and AIDS. This is because they are in constant contact with the blood and saliva of patients, which found the highest concentration of viruses of these diseases. And they may be the cause of transmission, as well as dental products that come into contact with the saliva and blood of patients may be a factor in transmission from the health care worker to patient and from patient to patient, hence the relevance of disinfection of dental products and dental materials from which these products are created.

There are two main directions in solving this problem: the first – a disinfection and sterilization dental materials or products from them before sending in the dental laboratory; second – the development of recipes for dental materials that have decontaminative property.

Objective – to develop a new national dental alginate impression material with decontaminative efficiency.

Tasks of the study:

- study the effectiveness of existing methods of disinfection prints;
- the study of their impact on precious prints and patterns.

Materials and methods. The authors have developed a recipe dental impression material with a decontaminative efficiency. The material includes weights. %: sodium alginate (12,25-16,75) natural gypsum (9,5-19,5), diatomaceous earth (60,5-61,5), sodium carbonate (1,95-2,05), sodium fluorosilicate (0,55-0,65), green

pigment (0,03-0,13), peroxide (2,0), mint oil (0,05), talc powder (5,22-5,32). Disinfecting effect causes including the peroxide in recipe.

Peroxide K-30 – white powder, pH 6-7 (1% solution). The substance is soluble in water. Has antibacterial properties.

In order to estimate the efficiency of disinfection we studied oral microbiocenosis of patients and bacterial contamination the prints of the developed material with a decontaminative efficiency compared to standard impression materials, which recipe has no components with the disinfecting effect.

For comparison, a dental impression material was selected from a recipe that includes sodium alginate, diatomite, sodium carbonate, sodium fluorosilicate, odorants, natural gypsum, talc powder.

In studying microbiocenosis of the oral cavity of patients participating in clinical studies, it was found that the total number of microorganisms was $(51,1 \pm 6,2)$ colony forming units per mL (CFU/mL). Microorganisms were represented mainly by anaerobic organisms (total $(28,2 \pm 3,4)$ CFU/ml, which is 55.2%), whereas aerobic bacteria were 44.8%. Among the most representative anaerobic flora $(5,52 \pm 0,16)$ cfu/ml) was *Lactobacterium* sp., among aerobic – *Streptoc. Pyogenes* $(6,21 \pm 0,10)$ cfu/ml).

In these same patients we get prints of prosthetic bed using investigated impression materials. For microbiological examination were performed wipes from the prints obtained.

Results of the research. It was found that disinfecting efficiency of the developed material manifested a significant decrease in levels of bacterial contamination of prints from all types of microorganisms compared to known materials. According to some studies the number of microorganisms on the print is from 6×10^9 to $1,14 \times 10^8$ microbial cells. If applying impression materials from developed recipes anaerobic flora on the print was represented by *Lactobacterium* sp. $(1,10 \pm 0,05)$ cfu/ml) and aerobic flora was represented by *Streptoc. Pyogenes* $(1,10 \pm 0,05)$ cfu/ml).

Conclusions. The using impression materials from developed recipe weights. %: sodium alginate (12,25-16,75) natural gypsum (9,5-19,5), diatomaceous earth (60,5-61,5), sodium carbonate (1,95-2,05), sodium fluorosilicate (0,55-0,65), green pigment (0,03-0,13), peroxide (2,0), mint oil (0,05), talc powder (5,22-5,32) reduces microbiocenosis of mouth more than 2 times. The use of impression materials from the developed recipe provides decontamination the main types of flora and its minimal presence (both quantitatively and qualitatively) on plaster models.