



# **ABSTRACT BOOK**



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**INTERNATIONAL SCIENTIFIC  
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# DENTISTRY



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## EFFICIENCY OF LASER TECHNOLOGY IN GINGIVAL OVERGROWTH TREATMENT BASED ON CLINICAL AND HISTOLOGICAL ASPECTS

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**Introduction.** Recently an amazing shift is occurring in dental field. Laser technology breakthrough and has generated a considerable interests among periodontists to perform a range of hard and soft tissue procedures. Erbium laser is one of the most promising laser types for treating hypertrophic gingivitis. However ,the clinical effectiveness of Erbium remains controversial. The aim of the study to assess systematically, clinically and histologically the scientific evidence for the effectiveness of Er,Cr: YSGG laser in treatment hypertrophic gingivitis.

**Materials and methods.** Electronic database searches of (PudMed/MEDline) from 2010 up to and including December 2016 using different keywords &clinical and experimental studies were included and read. Followed by conducting 8 clinical cases for patients with gingival overgrowth (Grade I) at therapeutic department. The treatment was carried out over 5 months. First: consist of ultrasonic scaling ,oral hygiene instruction,0.2% chlorohexidine mouthwash twice a day for 10 days. Second, gingivectomy was performed using Er,Cr:YSGG (2790 nm) followed by periodontal dressing. The patients were asked to assess pain experience based on questionnaire ,followed by clinical and histological evaluation by biopsy specimen at follow up 7 days , 21 days to assess parameters (Wound healing, postoperative bleeding).

**Results of research.** Based on questionnaire patients reported as relatively painless and easy procedure. Clinical evaluation results showed 5 cases at day 7 didn't exhibited superior healing , but at day 21 all cases exhibited total healing. But histological examination showed at day of gingivectomy necrotic epithelium, however after 7 days the second biopsy revealed densely fibrous CT with re-epithelization.

**Conclusions.** Results of cases and systematic review encourages the use of laser therapy is an effective treatment modality in treatment gingival enlargement. Besides it is a better option in terms of wound healing, infection control and reduced post-operative pain and bleeding.

*Kolisnyk O.*

## CLINICAL USE OF DRUGS BASED ON D-GLUCOSAMINE IN THE TREATMENT OF CATARRHAL GINGIVITIS

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**Introduction:** According to G. F. Beloklitskaya, the prevalence of periodontal tissue diseases among the adult population of Ukraine is 85-96%. The results of statistically reliable data indicated that the highest incidence rate is at the age of 35-44 years and 15-19 years. Glycosaminoglycans (GAGs) are played an important role in the

development of diseases of the periodontium contains of mainly sulfated glycosaminoglycans (sGAGs) - chondroitin (4/6) sulfate, dermatan-sulfate, heparan sulfate, heparin, keratin sulfate and hyaluronic acid (non-sulfated GAG). In inflammatory and dystrophic inflammatory processes in periodontal tissues, the disruption of collagen synthesis is accompanied by damage to the structural and functional components of tissues – proteoglycans (PGs), which undergo bacterial hyaluronidases and other factors undergo disintegration. Consequently, the protective function of the connective tissue of the periodontal tissue is violated, which is closely related to the decrease in the number of functional molecules of proteoglycans - sGAGs. These processes are adversely affected the functional state of the barrier mechanisms of periodontal tissues along the pathway of the aggressive parodontopathogenic microflora, which penetrates into the internal structures of the gingival stroma and the alveolar bone. In the future, when a pathological process occurs in the tissues of the periodontal tissue, this predetermines a substantial violation of tissue repair at different levels. In modern periodontology, the most promising approaches are considered with using of natural regulators of physiological and pathological processes that are devoided of any toxic effect on cells and tissues. Sulfated and non-sulfated GAGs are used as natural regulators of physiological and pathological processes in the periodontal tissue. The correct choice of a drug based on GAGs for topical treatment of catarrhal gingivitis is an actual problem and requires continuation of the investigation. The goal of the investigation is to increase of efficiency and clinical substantiation of the new concept of local treatment of patients with catarrhal gingivitis by using drugs based on D-glucosamine.

**Materials and methods.** We examined 20 patients with symptoms of catarrhal gingivitis (16 women and 4 men among them). Criteria for including patients in the study: age from 25 to 35 years, reliable diagnosis, patient's consent. According to anamnesis, the prescription of the disease is from one to three years. The condition of the periodontal tissue was assessed clinically. Patients were divided into 2 groups depending on the method of treatment: in the first one a complex treatment was performed using traditional local anti-inflammatory therapy with periodontal trays, in the second one - with local application of drugs based on D-glucosamine with periodontal trays. The exposure consists of 40 minutes twice a day for 14 days. Periodontal status was assessed by: bleeding of the gingiva at the H. R. Muhlemann index, Sulcus Bleeding Index (1971), the degree of inflammation in the gingiva - by the PMA index in the modification of C. Parma (1960), the prevalence and severity of inflammatory-dystrophic changes - according to the A. L. Russel index (1956). The hygienic state of the oral cavity was determined by the index of J. C. Green and J. R. Vermilion (OHI-S, 1964).

**Results of research.** Taking into the account of clinical and radiological picture, within the framework of the new concept of complex treatment of patients with catarrhal gingivitis, a gel composition based on D-glucosamine was developed for topical application. Clinical approbation of the gel composition on the basis of D-glucosamine allowed to locally enhance the anti-inflammatory, antiedemic actions, analgesic effect, optimized the reparative processes in the periodontal tissues and reduced the term of treatment and avoided side effects.

**Conclusions.** This investigation showed that those who were treated with D-glucosamine drugs in a complex treatment proceed more intensively and completely than similar processes in the periodontium in patients who were treated with the traditional method. Local and general using of drugs based on D-glucosamine is possible in order to increase the effectiveness of anti-inflammatory therapy in the complex treatment of catarrhal gingivitis.

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## **ANALYSIS OF THE EFFECTIVENESS OF NANOTECHNOLOGY IN THE PREVENTION OF CARIES AND NON-CARIOUS LESIONS**

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**Introduction.** Tooth enamel is a unique complex of bioceramic material, which is the hardest tissue of the human body. Protein amelogenin plays the main role in the synthesis of enamel. It organizes the organic matrix and stimulates the crystallization of hydroxyapatite, but, due to the active inclusion of minerals in the maturing enamel, this matrix degrades during the amelogenesis period.

Swiss scientists have found a way to simulate the formation of an organic matrix of enamel carious defects, stimulating the regeneration of enamel by natural biomineralization. The biomimetic peptides of amelogenin activated in the oral cavity (by special pH level) form a three-dimensional (3D) biomatrix, which accumulates calcium and phosphorus minerals from the saliva, and forms the structural elements of the tooth enamel-hydroxyapatite. This technology simulates natural amelogenesis. Amelogenin has wide indications for the treatment of carious and non-carious lesions of temporary and permanent teeth: hypoplasia of enamel, fluorosis, enamel cracks, caries after orthodontic treatment, remineralization of enamel after abrasive bleaching. The application procedure occurs without drilling or prior application of the acid to infiltrate the enamel. It is enough to apply one drop of the amelogenin on the enamel to start the process of biomatrix formation or biomimetic regeneration using calcium and phosphorus ions from the patient's oral fluid. Restoration of enamel after application of the amelogenin takes from one to three months and this saves time for both the dentist and the patient. In the study, we determined the effectiveness of the use of amelogenin in patients with enamel cracks and fluorosis.

**Materials and methods.** The study involved 40 patients (20 - with fluorosis and 20 with enamel cracks). All patients were trained in hygiene skills, used toothpaste with fluorides of one manufacturer for the reliability of the experiment.

**Results of research.** The result of treatment was evaluated after the end of the therapeutic treatment. Amelogenin was effective in treating patients with fluorosis - 95% efficiency (19 patients out of 20), and with enamel cracks - 90% (18 patients out of 20). The results show a high level of effectiveness of fluorosis and enamel cracks treatment.

Khvorostinko R., Davydych A.....	
Kiebashvili S., Gnatenko O.....	149
Kindruk M. ....	240
Klymenko O., Danilchenko D., Lobova V., Gvalt V., Zlatkina V. ....	44
Knigin M., Chirva A., Katelevskaya N.....	241
Knyhin M., Artsylenko K.....	45
Kolesnik A.....	46
Kolisnyk O. ....	255
Koliubaieva O.....	47
Koljada I., Ivzhenko L.....	48
Kolotilov A., Tyrkin D., Maslovska A.....	49
Komarov D., Mikulinskaya-Rudich Yu. ....	257
Konareva V., Korolkova A., Tryhub Yu.....	173
Korniyets A., Mezhenkaya E.....	105
Korolkova A., Korchak Y. ....	174
Korolkova A., Rakhman P. ....	14
Koteliukh L., Borovyk K., Ryndina N. ....	50
Koval V. ....	175
Kovalchuk V., Malets O.....	51
Kravchenko V., Teslenko A.....	211
Kravchun P. ....	52
Kruglyak V., Babayeva A. ....	106
Kruglyak V., Guyvan I.....	107
Krukovets N. ....	108
Kucherenko O., Mohammad Ahmed Mustafa Al Amayreh, Gaber Daniel, Alaa Ibrahim Mousa Alyasouri.....	212
Kuleshova A., Ivakhnenko D. ....	187
Kupchyk K. ....	109
Kurchanova Y., Ivanteieva Y., Onashko J.....	15
Kuzminova V. ....	213
Kuzminova V. ....	52
Kuznetsova D., Goncharov A. ....	110
Kvasova P.....	53
Lapshyn D. ....	110