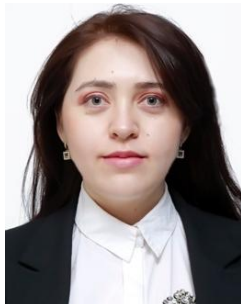


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IMPROVEMENTS IN THE TREATMENT OF PUBERTAL PERIODONTAL DISEASE



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БАЛОҒАТ ЁШИДАГИЛАРДА ПАРОДОНТ КАСАЛЛИКЛАРИНИ ДАВОЛАШНИ ТАКОМИЛЛАШТИРИШ

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СОВЕРШЕНСТВОВАНИЕ ЛЕЧЕНИЯ ЗАБОЛЕВАНИЙ ПАРОДОНТА В ПУБЕРТАТНОМ ВОЗРАСТЕ

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Резюме. Шифокор-стоматологнинг клиник амалиётда пародонт касалликларида мазлар ва геларнинг даволаш даврида тасир кучи паслиги ҳисобига ва этарли даражада самарали бўлмаган сабабли, беморларимизда пародонт тўқималаридаги касалликларнинг кечилиши олдини олиш ва даволашнинг юқори самарадорлигини таъминлаш учун "Diplen-Denta M" дори воситасини ўсмирларда клиник самарадорлигини ўргандик.

Калит сўзлар: диплен-дента М, сурункали тарқоқ пародонтит.

Abstract. The use of solutions, ointments and gels in the clinical practice of a dentist is not effective enough in the treatment of periodontal tissue diseases due to the inconstant concentration of the drug in the oral cavity and the short-term nature of its contact with the mucous membrane. The use of medicinal films, which are plates in the form of strips, allows for high efficiency in the prevention and treatment of periodontal tissue diseases. In this study, we studied the clinical effectiveness of the use of Diplen-Denta M films in rapidly progressing aggressive periodontitis in adolescents.

Keywords: Diplen-Denta M, chronic generalized periodontitis.

Relevance. Local drug therapy of periodontal tissue diseases is an important part of the complex treatment of this widespread pathology in dental practice. In rapidly progressive aggressive periodontitis (PAP), there is a rapid loss of gingival attachment and bone resorption. Rapidly progressive aggressive periodontitis is considered to be a polyetiological disease, with environmental and genetic factors playing a significant role in its onset. Rapidly progressive aggressive periodontitis is considered to be a polyetiological disease. A combination of local and general factors influences the formation of rapidly progressive aggressive periodontitis in adolescence. Local factors include the presence of dental plaques, soft plaque, tartar, occlusion trauma, anomalies in the arrangement of teeth in the dental arch, such as crowding of teeth. In addition, the combined effect of local and general factors against the background of altered reactivity of the organism can contribute to the progression of periodontal diseases. A new approach to the treatment and prevention of dental diseases is the use of bio-soluble drug films [5], which are a transdermal therapeutic system and promote prolonged local administration of biologically active substances into the body. In this regard, the utilisation of application forms of

drug administration via drug films appears to be a highly promising avenue of research. This approach offers the potential for targeted localised administration of the drug, control of the duration of exposure and concentration of the active substance. The employment of biopolymer films in the context of periodontal diseases represents a variant of the application of prolonged-acting dosage forms with a range of pharmacological agents.

Methods of Research. The study included 59 patients (29 males and 30 females) aged 14 to 18 years with the diagnosis of neutralized periodontitis. The group comprises adolescents residing in Samarkand, belonging to diverse national and ethnic backgrounds. All subjects underwent comprehensive examinations, including the Schiller-Pisarev test, PMA index (papillary-marginal-alveolar index), periodontal index (PI according to Russell), Green and Wermillion hygienic index, and periodontal charting to ascertain the depth of periodontal pockets. Additionally, radiological investigations of periodontal tissues were conducted. The criteria for the efficacy of the treatment in both groups were based on the following indicators: the elimination of the inflammatory reaction in periodontal tissues, the appearance of turf edge density, the positive dynamics

of the Green-Vermillion hygienic index, the PMA index (1948) and the periodontal index (PI) according to Russell (1956). In addition to the clinical data, the microbiological picture (microbial landscape) was evaluated at three time points: before treatment, during treatment phases and after treatment. Furthermore, laboratory tests of periodontal pockets of adolescents with rapidly progressive aggressive periodontitis were performed using the polymerase chain reaction (PCR) method. The sensitivity of pathogenic microorganisms of periodontal pockets to the film «Diplen-Denta M» was determined by the disc-diffusion method on the basis of SamSMU.

Discussion. This study aimed to evaluate the subjective feelings of patients at various stages of the treatment process and in the post-treatment period. The second group of patients with BAP who used «Diplen-Denta M» medicinal films observed an improvement in their gum condition following treatment, as well as a disappearance of discomfort, elimination of halitosis, and a reduction or complete cessation of gum bleeding (Figure 3). Furthermore, the patients reported that the plates were convenient to apply at home, that the films adhered well to the gingival mucosa, and that the taste was pleasant. Objective examination revealed that oral hygiene parameters improved in both groups on the second visit after professional oral hygiene (Table 2). The data presented in Table 2 demonstrate a favourable evolution of clinical parameters following the complex treatment of patients with ALD in both groups. This is substantiated by an enhancement in the Green-Vermillion hygiene index, a reduction in the PMA index and the Russell periodontal index (PI) in both groups. In the second comparable group of patients with ALD treated with medicinal films, the indices exhibit a more pronounced positive dynamic than in the primary group of patients with ALD.

The present study employed the film «Diplen-Denta M» in the local treatment of aggressive rapidly progressive periodontitis in adolescents. The two-layer film, «Diplen-Denta M» comprises combined hydrophilic and hydrophobic layers, designed for local use. Each square centimetre of film thickness (0.02-0.06 mm) contains metronidazole at a concentration of 0.01-0.03 mg. The film has a broad spectrum of activity against anaerobic bacteria that have taken root in the oral cavity and are sensitive to metronidazole. In aggressive forms of periodontitis in adolescents, obligate and facultative anaerobic microflora are predominant. The application of «Diplen-Denta M» M film in the treatment of various infectious and inflammatory diseases of the oral cavity and gums results in the disappearance or significant reduction of aggressive species of anaerobic bacteria belonging to the genera Prevotella, Porphyromonas, Bacteroides, Fusobacterium, Peptostreptococcus and Actinomyces. The film is straightforward to apply, and patients are able to apply it independently, in accordance with the instructions provided by the physician.

The hydrophilic (adhesive) side of «Diplen-Denta M» is firmly attached to the wet surface of the gingiva and mucous membrane, remaining in place for several hours. The affected area is effectively sealed and isolated from the surrounding environment. The possibility of a secondary infection is thus excluded, while the active and selective effect of the therapeutic factor on the location is carried out. The outer layer, which is hydrophobic in nature, serves to prevent the exit of film components into the mouth cavity and the ingress of oral fluid into the zone of film action. The film is transparent, thus enabling observation of the dynamics of the pathological process without the need for its removal from the affected area.

Table 1. Mean values of the main indices in both study groups before and after treatment

The following research groups are represented:		PMA Index	Green-Vermillion Index	Periodontal Index (PI) according to Russell's Index
Before treatment	Group 1	55,86±3,40	1,75 ±0,30	3,56±0,50
	Group 2	53,18±4,15	1,82±0,70	3,48±0,66
After treatment	Group 1	32,7±1,24	0,75±0,30	1,78±0,53
	Group 2	25,8±2,40	0,72±0,53	1,25±0,63
Degree of certainty		<0,02	<0,04	<0,02



Fig. 1. Depicts the OPG of a 18-year-old patient from Group 2 prior to treatment



Fig. 2-3. An 18-year-old patient from group 2 is being treated with «Diplen-Denta M». The drug is administered at different stages of treatment

The application of the film «Diplen-Denta M» in the treatment of various infectious and inflammatory diseases of the oral cavity and gums has been observed to result in the disappearance or significant reduction in the number of aggressive species of anaerobic bacteria genera, including *Prevotella*, *Porphyromonas*, *Bacteroides*, *Fusobacterium*, *Peptostreptococcus*, and *Actinomices*.

Prior to commencing treatment with «Diplen-Denta M» film, supra- and sub-gingival dental deposits must be removed and curettage performed as indicated. The film is then applied in the following manner: a strip of film measuring 50 mm in length and 10 mm in width (or an alternative size deemed appropriate) is cut and the adhesive side is applied to the gingiva. As a general rule, the initial two to three applications are conducted in a clinical setting, concurrently with patient training in the technique of independent application. In the absence of exceptional circumstances, patients are instructed to apply the film independently (preferably at night) during this phase of treatment. It is recommended that the film be applied daily to all four quadrants following one or two brushing sessions per day.

In the context of this study, the application of the «Diplen-Denta M» film was conducted in conjunction with other periodontological measures. The recommended course of treatment is contingent upon the severity of aggressive, rapidly progressive periodontitis in the studied adolescents. At a mild degree of severity, five to eight applications (applications at night) are sufficient. At a moderate degree of severity, the course of treatment varies from six to ten days. At a severe degree of severity, the course of treatment averages seventeen to twenty days. The treatment plan is determined on a case-by-case basis for each patient. The majority of patients with BAP require orthodontic treatment.

Conclusions: This study aimed to assess the clinical efficacy of «Diplen-Denta M» drug films in the local treatment of BAP in adolescents. The findings of this study corroborate the hypothesis that the use of «Diplen-Denta M» drug films for the treatment of BAP in adolescents may result in more effective outcomes in a shorter period of time, due to the unique form and composition of the drug films.

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СОВЕРШЕНСТВОВАНИЕ ЛЕЧЕНИЯ ЗАБОЛЕВАНИЙ ПАРОДОНТА В ПУБЕРТАТНОМ ВОЗРАСТЕ

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Резюме. Применение в клинической практике врача-стоматолога растворов, мазей и гелей, недостаточно эффективно при лечении заболеваний тканей пародонта ввиду непостоянства концентрации лекарственного вещества в полости рта, кратковременности его контакта со слизистой оболочкой. Обеспечить высокую эффективность профилактики и лечения заболеваний тканей пародонта позволяет использование лекарственных пленок, представляющих собой пластины в виде полосок. В данном исследовании мы изучили клиническую эффективность применения пленок «Diplen-Denta M» при быстропрогрессирующем агрессивном пародонтите у подростков.

Ключевые слова: Diplen-Denta M, хронический генерализованный пародонтит.