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THE RESULTS OF DIAGNOSIS AND TREATMENT OF CHRONIC GENERALIZED CATARRHAL GINGIVITIS IN CHILDREN AT THE BACKGROUND OF CHRONIC TONSILLAR INFECTION

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Abstract

Biocenosis of sulcus in chronic generalized catarrhal gingivitis children (CGCG) without background pathology and with chronic tonsillitis (CH) has been investigated. Its development and clinical course depending on dominant microbial agent (streptococci or staphylococci) are specified. This expands our knowledge about etiology and pathogenesis of CGCG. The results of local immunity and nonspecific resistance study in CGCG children with/ without contaminant pathology are given. A new method of the patients under study treatment has been worked out and clinically tested. It has been established that the use of the complex offered allowes to reduce a number of complications, relapses, and increases the general efficacy of treatment.

Key words: chronic catarrhal gingivitis, chronic tonsillitis, children, changed biocenosis, immunological aalteration, complex treatment, «Sinupret», «Imupret», «Listerine».

Introduction. The modern level of theoretical and practical achievements of general biological and medical sciences allows to develop a new approach to increasing the effectiveness of the integrated treatment of chronic generalized catarrhal gingivitis (CGCG)

associated with concomitant pathology in children. The theoretical prerequisite for this type of research was the established fact of participation of different microbial associations in the disease's genesis and the presence of specific and unspecific immunity in gingivitis patients.

Based on these positions, a separate group of the children sick with CGCG and chronic tonsillitis (CT) was formed.

It is possible to assume that the presence of a chronic inflammatory process in the palatine tonsils will negatively affect the biocenosis of sulcus by replacing the less virulent microorganisms with more virulent ones. This situation will lead to decrease in local and general factors of nonspecific resistance, which in turn will lead to a new clinical situation in such patients, and the latter will determine the growing difficulties in combating the infectious inflammatory process in the gums, both in the terms of diagnostic and therapy.

To date, it is known that the infectious agent has a leading role in the emergence of chronic catarrhal gingivitis only when the microbial factor has overcome the nonspecific protective reactions of the organism at the initial and subsequent stages of their interaction and under the influence of a chronic infectious inflammatory focus in tonsils [1 - 5].

It is known from literature that there are certain successes in the treatment of CGCG in children and adolescents [1, 4], but the effectiveness of therapeutic complexes applied can not be recognized as sufficiently effective [4, 5, 6].

It is obvious that etiotropic therapy of the inflammatory process in the gums should be performed by topical application of direct action antibacterial and anti-inflammatory agents. A differentiated approach to the selection of medicines for suppression of the infectious factor and elimination of inflammation in the gums is particularly necessary as well as the means that correct nonspecific defense factors.

The drugs of fundamentally new class created recently, show a multi-directional effect on the main links of the infectious inflammatory process - pathogenic microflora, inflammatory response and altered nonspecific resistance. They have a prospect of the use in the complex treatment of CGCG complicated by CT presence. Attention is paid to such herbal medicines with complex activity, like Sinupret and Imupret [7, 8, 9, 10] produced by BIONORICA (Germany).

Proceeding from the foregoing, it is necessary to recognize the need to further search for new therapeutic periodontal methods in the therapy of CGCG, especially that occurs against the background of sulcus modified biocenosis under the influence of infectious focus in the palatine tonsils.

The objective. To increase the effectiveness of CGCG treatment at the background of CT in children through targeted etiotropic effects on the microbial flora of gum tissue and altered nonspecific resistance.

Materials and methods. To achieve this objective clinical, microbiological and immunological studies were conducted, as well as treatment of 102 CGCG children with CT. The average age of the children examined was 10.3 ± 0.47 years; 10-12 y. o. children prevailed (80.8% of the patients). The disease was more often registered in girls (60.6%), less often in boys (39.4%). L. A. Khomenko (1999) clinical classification was used in the present work. According to it the chronic course and the course of exacerbation of chronic catarrhal gingivitis were distinguished.

The control group consisted of 33 practically healthy children without clinical signs of inflammation in parodontium.

Clinical and microbiological studies were conducted in dynamics: the first examination was performed before the treatment, the second and third - on 15^{th} and 30^{th} days during the period of the therapeutic and prophylactic complex measures fulfillment, the 4th and 5^{th} - in 6-12 months after the completion of the complex treatment.

Clinical and anamnestic data were evaluated and entered into a specially developed file: complaints, medical history, objective clinical data, level of generally accepted periodontal indices and samples. The oral cavity hygiene was assessed by the OHI-S hygiene index, which was used to quantify soft plaque and dental tartar. For a more complete evaluation of the activity of the inflammatory chronic process in the gums gingivitis PMA index in Parma modification, digital sample of Schiller-Pisarev (III-IV) and gums bleeding index were determined.

To determine the condition of a compact plate of inter-alveolar septa and alveolar bone, orthopantomographic examination (apparatus "Pelomen DV") was used.

Material for bacteriological studies in sick children was taken from sulcus. Microbiological studies were carried out in accordance with the methodological recommendations "On the unification of microbiological (bacteriological) research methods used in clinical diagnostic laboratories of medical and preventive institutions" (1985).

Microorganisms' isolated strains were identified by morphological, tinctorial and biochemical features. For this the methodological recommendations of the USSR Ministry of Health Care (1990) and, accordingly, Bergey's manual were utilized. To verify the cultures, an international set of standard bacteriophages (M. F. Gamalia Institute of Epidemiology and

Microbiology of the Russian Academy of Medical Sciences) was practiced. Sulcus' seeding was studied by counting the colony forming units (CFU).

The adhesive ability of the bacteria isolated from sulcus was determined by the method of V. I. Brilis, antilysozymic activity - according to the method of O. V. Bukharin et al.

To determine the sensitivity of the main bacteria of sulcus to antibacterial drugs, the paper disc method and the diffusion method in agar on nutrient media were used (USSR State Pharmacopeia, 1990).

Immunobiological studies of peripheral uletic blood and mixed unstimulated saliva (oral fluid) comprised a group of special methods.

Lymphocytes immunophenotyping was carried out by determining the populations and subpopulations according to A. F. Frolov and I. S. Markov and in the indirect reaction of immunofluorescence with monoclonal antibodies of the ICO "Diagnostic" series (Moscow) by the method of the developers. A set of monoclonal antibodies CD3, CD4, CD8, CD16, CD72 were used.

Neutrophil phagocytic activity (NPA) was assessed by the ability of the cells to capture *S. aureus.* NPA (the percentage of neutrophils that phagocytize staphylococcus), the phagocytic number (the average number of *S. aureus* captured by a single cell), the ability of leukocytes to phagocytic activity were determined at basal levels and with zymosan stimulation.

The quantitative determination of IgA, IgG, IgM in the gingival blood and secretory IgA in unstimulated saliva was determined by radial immunodiffusion in gel.

Tension of humoral antibacterial immunity was determined by estimating the concentration of antibodies to antigenes of *Streptococcus salivarius, Streptococcus sanguis, Staphylococcus aureus, Staphylococcus epidermalis,* lipopolysaccharide *E. coli 014; Candida albicans* by the method of solid phase enzyme immunoassay.

The results were processed mathematically using variational statistics methods.

Results and their discussion. Microbiological studies of sulcus bacterial flora were performed in 46 patients with CGCG without concomitant pathology and in 56 patients with CGCG associated with CT. The infectious factor detection results were positive in patients with CGCG without background pathology in 95.5% of cases, associated with CT - in 100%. In the first group streptococci (86.7%) dominated. Their average number equaled to 4.38 x $10^2 \pm 75.1$ *CFU* / cm^2. *Streptococcus salivarius* predominated in the genus of Streptococcus. Less frequently, *staphylococci* (10.6%), *E. coli* (13.4%), *Klebsiella* (6.79%), gram-negative

bacteria (8.9%), *Candida fungi* (4.87%) were plated less frequently in the groups under analysis.

In contrast, in others, sulcus' biocenosis was characterized by aerobic pathogenic staphylococci (87.5% of patients) domination, decrease streptococci's level (up to 43.5% vs. 86.7% in the first group) and increased plating of gram - negative microorganisms (enterobacteria and actinobacteria) (up to 25.7% of cases), *Klebsiella* (up to 21.6% of cases), *Candida* fungi (up to 13.4% of cases) took place.

Special attention should be paid to sharp increase of microbial associations density in CGCG patients at the background of CT (on average - up to $6.73 \times 10^6 \pm 60.4$ CFU / cm^2. In the patients under examination such microorganisms were more often isolated in different associations (in 72.8% against 23.8% in the patients without concomitant pathology).

Thus, it was established that in CGCG patients with CT, streptococcal microflora lost its position and moved from the category of dominant species to the category of second-rate one. The loss of streptococci key role in the microflora led to prevailing dominance of staphylococcal microorganisms in combination with 3-4 other species (*actinobacter, enterobacter, Candida fungi, Klebsiella*, etc.)

Taking into account that virulence of microorganisms largely depends on their ability to exhibit antilysozymic effect and their adhesive activity, we investigated these parameters in different groups of CGCG children.

As a result of the studies performed, significant discrepancies in the severity of the adhesive abilities between the strains isolated in CGCH patients, associated with HT and at the background-free pathology children were revealed. In the former *Staphylococci* had more pronounced adhesiveness (in 79.3 ± 4.8% and 26.5 ± 6.3% of children, $p > 0.05$), and *Streptococci* - in children without concomitant pathology (in 83.2 ± 8,1% and 17.9±7.3%). Among staphylococci, actinobacteria and enterobacteria viscid *active* strains constituted 89.3 ± 4.8%; 94.2 ± 9.7% and 91.6 ± 8.3%, respectively, whereas among streptococci such cultures were significantly less - 32.4 ± 5.3%, respectively ($p < 0.05$).

Among the representatives of different types of microorganisms, the frequency of detection of antilysozymic *active* strains ranged from 18.6 to 91.8%. Moreover, in CGCG children without concomitant pathology, the level of antilysozymic activity of the majority of bacteria was found to be low on average in the group, and in CGCG children, associated with HT, it was high.

In CGCG children with HT antilysozymic activity of staphylococci, actinobacter, enterobacter was 7.22 ± 0.34 mg / ml; 6.91 ± 0.43 mg / ml and 5.99 ± 0.39 mg / ml,

correspondingly. At what the cultures of staphylococci of both species did not differ in this indicator. We paid special attention to the fact that the parameters of antilysozymic activity to streptococci in the children of these groups did not exceed 2.0 mg / ml.

In CGCG children, the average level of streptococci antilysozymic activity was not high on the average (2.08 ± 0.24 mg / ml). However, in *Streptococcus salivarius* it increased significantly (3.92 ± 0.46 mg / ml).

CGCG patients, associated with HT, had significantly low concentrations of antibodies to *S. aureus, S. epidermalis, Str. Salivarius, Str. Sangvinis, E. coli, Candida albicans* (2.04 ± 0.2 mg / ml, 3.06 ± 0.21 mg / ml, 1.07 ± 0.1 mg / ml, 1.63 ± 0.23 mg / Ml, 3.94 ± 0.43 mg / ml, 3.30 ± 0.2 mg / ml, against the values in the control of 6.7 ± 0.3 mg / ml, 1.79 ± 0.17 mg / ml; 2,3 ± 30,2 mg / ml, 4,55 ± 0,2 mg / ml, 4,48 ± 0,2 mg / ml, p <0,05). This fact, to our mind, deserves special attention.

In contrast, in CGCG children without background pathology, higher concentrations of antibodies to the listed microorganisms (5.27 ± 0.36 mg / ml, 4.01 ± 0.18 mg / ml, 1.43 ± 0.1 mg / Ml, 1.98 ± 0.1 mg / ml, 4.24 ± 0.34 mg / ml, 3.88 ± 0.1 mg / ml) were kept.

In the study of clinical and microbiological indicators, it was established that in CGCG children there were changes in sulcus's biocenosis towards the prevalence of staphylococcal infection over streptococcal, which is accompanied by a significant activation of the inflammatory reaction in paradontium. Thus, indices and periodontal tests in these patients were maximally high: PMA - 31.4 ± 1.2%, gingival bleeding index - 3.4 ± 0.12 points, test *SCH-P* - 2.8 ± 0.2 score, OHI - 2.1 ± 0.2 points. In the case of streptococcal infection predominance, the severity of clinical and paraclinical symptoms of CGCG was less - PMA - 18.4 ± 12%, gingival bleeding - 2.03 ± 0.14, *test SCH - P* - 2.8 ± 0.2, OHI - 1.84 ± 0.16; p> 0.05).

Clinical, paraclinical and microbiological results obtained (in the dynamics of observations) allowed, depending on sulcus's biocenosis, to distinguish two clinical varieties of CGCG: chronic and subacute. This distribution is based on the peculiarity of inflammation in the marginal paradontium part and time factor.

We should suspect CGCG chronic course if it is not accompanied by a pronounced subjective symptomatology with low indexes and parodontium tests for more than 6 months.

Subacute course of the disease can be diagnosed in the case when CGCG has a clear clinical and paraclinical symptoms for 6 weeks.

Subsequently, we conducted studies to identify the sensitivity of the main highly virulent microorganisms of sulcus to a variety of medicinal antimicrobial agents, which are

most often used in the complex treatment of CGCG (lincomycin, metronidazole), as well as to new drugs, Sinupret and Imupret.

We managed to establish that the main pathogens sensitivity spectrum in CGCG children at the background of CH is very peculiar. In CGCG children with HT, the number of *S. epidermalis* and *S. aureus* strains resistant to lincomycin and metronidazole increased threefold and was 75.5% and 100% of the cases; *Str. Salivarius* and *Str. Sangvinis* - respectively constituted 45.2% and 21.1% of cases. At the same time, highly sensitive strains were registered to the named microorganisms relatively to Sinupret and Imupret in 96.6% and 92,5% of cases, retrospectively. Moreover, in Imupret and Sinupret the minimal oppressive concentration appeared lower than in metronidazole and, especially, lincomycin.

Integral assessment of the local immune status and local nonspecific resistance in CGCG children with subacute and chronic course highlighted similar and distinctive features of these processes, allowed to link the severity of the identified changes with clinical signs of inflammation in the marginal paradontium - the activity of severity of clinical symptoms of the disease and the degree of contamination and types of sulcus‘s microorganisms. In CGCG children under examination two types of immune reactivity were identified depending on the precipitating aetiological microbial factor (either staphylococcal or streptococcal infection). The first type of immune reactivity was noted in 92.5% of CGCG children of chronic streptococcal etiology.

It is characterized by moderate inhibition of spontaneous and induced phagocytic activity (phagocytic activity - 46.8 ± 2.1% and 54.2 ± 2.2%, phagocytic index 6.0 ± 0.2 and 6.8 ± 0.2) , Ig G and secretory Ig A (up to 9.7 ± 1.4 mg / ml and 5.5 ± 1.2 mg / ml), increase of Ig M level (up to 1.39 ± 0.2 mg / ml), decrease of immunocompetent cells level (T - lymphocytes - up to 30,1 ± 1,2%, B - lymphocytes - up to 18,9 ± 1,4%, O - lymphocytes - up to 22,6 ± 0,4%).

Changes in T-lymphocyte subpopulations for immunoreaction of this type were of little significance: some increase in T-helper content (up to 21.0 ± 1.2%), decrease in T-suppressors (up to 26.8 ± 1.3%) and immunoregulatory index (up to 1.12 ± 0.36%) relative to the indices of healthy children (19.6 ± 0.4%, 28.9 ± 0.5% and 1.47 ± 0.3%) were determined.

Another type of immune deficiency is diagnosed in 95% of children with CGCG of staphylococcal etiology. It is characterized by a significant suppression of phagocyte activity of leukocytes (phagocytic activity - 31.9 ± 2.0% and 45.8 ± 3.1%, phagocytic index - 4.8 ± 0.4% and 5.2 ± 0.3%), Ig G (7.8 ± 1.3 mg / ml), secretory Ig A (3.29 ± 0.8 mg / ml), increase

in the level of Ig M (2.01 ± 0,4 mg / ml), sharp decrease in T - lymphocytes (up to 26.1 ± 1.4%), B - lymphocytes (up to 28.7 ± 1.6%), O - lymphocytes (up to 14.2 ± 0.8%).

The principal role, in our opinion, has the established regularity that this immunodeficiency proceeds according to the variant of T - suppressor and T - helper insufficiency. Reduction of these cells in comparison with the parameters of the norm were significant (T - helpers - up to 16.5 ± 1.4%, T - suppressors - up to 24.5 ± 1.26%).

Thus, the presence of tonsillar infection significantly affects sulcus's biocenosis in CGCG patients. Such patients' etiological priorities belong to staphylococcal infection, which increases the local deficit of immune and non-specific factors of resistance and thereby determines the subacute course of the disease. Pathogenic staphylococci by their enzymes and toxins more than streptococci not only cause a harmful effect to marginal paradontium tissues, but also cause significant changes in immune system defense reactions at the local level in CGCG patients.

The regularity established that CGCG without comorbidity and against the background of CT occurs under the influence of various infectious agents and changes of local immune mechanisms of uncertain nature, allowed to justify the individual choice of purposive antibiotic (causal) treatment and the necessary volume of substitution and stimulation immunotherapy in the groups under observation. Simultaneously with our intervention, CT treatment was performed by a pediatric otolaryngologist.

To solve these problems, we formed three main clinical groups. The first one comprised 46 CGCG children without concomitant diseases. After comprehensive dental prophylaxis (removal of soft and hard dental plaque) [11, 12]. Sinupret solution, which includes a unique combination of plants: the root of gentian, flowers of primrose with cups, sorrel, flowers of Sambucus and verbena grass) was injected in sulcus.

As an immunostimulating therapy, CGCG patients got Sinupret inside - 25 drops or 1 pill 3 times a day. The duration of the drug use depended on the clinical picture of the disease. Drops were used in undiluted form (at inside use by children they can be added to juice or tea), pills were swallowed without chewing, squeezed with a small amount of water.

Vegetative components of Sinupret have a complex effect, which manifests itself in secretolitic effect, elimination of bronchial constriction, anti-inflammatory, immunostimulating and antiviral effects. Preparation adjusts and normalizes secretion of mucus and sputum viscosity, reduces tissue edema, restores sinuses drainage and ventilation, eliminates nasal congestion, normalizes the respiratory tract epithelium function, displays

immunostimulating effect (Marz R. W., et al., 1999), significantly increases efficacy of adjunctive antibiotic therapy (Schmidt W., 1975) [7, 9].

The second group consisted of 28 CGCG children with CT. The treatment complex was similar to that of the first group.

The third group was similar in diagnosis and the number of the children examined with the second group. Treatment provided local use as antibacterial therapy "Listerine Zero - Refreshing Mint" (USA), intensive alcohol-free mouth rinse. Its action is based on the action of 4 essential oils, which provides oral cavity ideal purity. "Listerine"'s innovative formula consists of four active components: menthol, thymol, eucalyptol, methyl salicyate. "Listerine" prevents microorganisms adhesion on teeth surface; decrease bacteria total number, it does not disturb the oral cavity microflora; prevents the release of microorganisms' life components, promotes destruction and inhibition of microorganisms' enzymes activity and increases time required to restore the number of bacteria. The drug was used after brushing the teeth in the morning and in the evening. Recommendations: pour 20 ml (3-4 teaspoons) into a glass and rinse the mouth for 30 seconds, then spit. "Listerine" was used as a rinse and irrigation after professional oral cavity hygiene (removal of soft and mineralized dental deposits) in CGCG children. Further, a solution of Imupret was introduced into sulcus. Imupret consists of altea root, chamomile flowers, horsetail, yarrow, dandelion, walnut leaves and oak bark. As an immunostimulating therapy CGCG children with CT got Imupret by 15-25 drops inside - children under 11 y. o. got 15 drops three times per day, and children aged 12 years old and over got 25 drops thrice a day or 1-2 tablets 3 times a day. With that children under 11 years of age got 1 tablet 3 times a day, and children aged over 12 years - 2 tablets thrice per day.

The duration of the basic therapy was usually 4-6 weeks.

Active components of chamomile, althea and horsetail stimulate the body's protective mechanisms by increasing the phagocytic activity of macrophages and granulocytes. Extracts of these plants also increase the intracellular destruction of the absorbed microbes due to the increased formation of bactericidal oxygen metabolites. Polysaccharides, essential oils and flavonoids of chamomile, althea and dandelion have an anti-inflammatory effect, reduce edema of the mucous membrane. Oak bark is rich in tannins and has antiviral activity, including influenza virus.

Such a variety of components that are part of Imupret cause multifaceted mechanism of this drug action. Imupret primarily stimulates host defenses by phagocytosis of macrophages and granulocytes activation, accelerates pathogens elimination. It has anti-

inflammatory and anti-edema action, is an auxiliary and supporting agent in antibiotic therapy due to compensation of antibiotic damage to the immune system [8, 10]. Imupret also has an antiviral effect.

Inclusion in the complex treatment of CGCG children with CT (group 3) Imupret in combination with "Listerine"'s action on oral cavity bacterial microflora promoted effectiveness of drug-induced therapy of the disease by 29%.

In CGCG children without concomitant pathology, clinical results were achieved by topical application and overall impact of Sinupret alone. Reduction of bleeding, hyperemia and gingivae swelling in 3-4 days was observed in the 3rd group all patients, in 90% of the 1st group patients and in 20% of patients in the 2nd group. Complete elimination of inflammation in marginal paradontium was achieved under the influence of the treatment complex in the 3rd group earlier. Positive dynamics of clinical manifestations of gums inflammatory process in the 3rd group prevailed over the same in group 2 on average by 5.5 days and by 2.5 days in group 1. Elimination of gingivitis clinical signs was the fastest also in the 3rd group- it appeared in 5-6 days in 78.9% of cases. To achieve the same therapeutic effect in children of the 2nd group we needed not less than 7 days (an average of 9.2 ± 0.2). Elimination of the inflammatory process in the marginal part of the gum in CGCG children without attended pathology was at the average 1.6 days slower compared with that in the 3rd group but 2.2 days quicker that in the 2nd group.

The 3rd group therapeutic complex preponderance over that of the 2nd group is confirmed by the dynamics of clinical indices and periodontal tests. The objective criteria clearly demonstrate the high effectiveness of the therapeutic complex use in the 3rd group. It allowed to normalize capillary-marginal-alveolar (PMA) index, eliminate gums' bleeding and hyperaemia (1.6 ± 0.1, 0.2 ± 0.04, 0.2 ± 0.01, correspondingly). While in some 2nd group children the inflammation signs did not disappear after the treatment conducted (according to the indexes and tests of marginal paradontium) and it prevented to normalize mean values of PMA, FMBS, Schiller-Pisarev test (12.3 ± 0.7, 0.9 ± 0.04, 0.78 ± 0.03, respectively). In the 3rd group Schiller-Pisarev test was negative in 92.8% and bleeding was eliminated in 92.6% of the patients under examination. At the same time, in the 2nd group children these parameters normalized in 65.2% of cases.

Topical application of Listerine-Imupret complex increases anti-edema action of the latter and this is of particular interest. Thus, in all patients of the 3rd group, locally treated with the above-mentioned drugs, the swelling of gingivae was eliminated in 2-3 days. The use of Sinupret in the 2nd group eliminated swelling only in 5-6 days. It has been established that the

applied therapeutic complexes affected differently sulcus bacterization. In CGCG children without concomitant pathology (group 1) an adequate effect on sulcus bacterial contamination was observed when using Sinupret solution as antibacterial therapy. Thus, in 5-6 days in 18 (39.1%) patients and in 7-8 days in 41 (89.1%) patients pathogenic streptococci were not plate from sulcus, or were plated at a very small amount. This followed up by liquidation of sulcus inflammation. The most promoted decrease of sulcus bacterization and at a shorter time took place in CGCG children with CT who had topical applications of Listerine and Imupret.

In 5 - 6 days in 22 out of 28 (78.6%) sick children and in 7 - 8 days of treatment in 26 (92.8%) children the medicinal preparations used depressed staphylococcal flora of sulcus. The results in Sinupret - treated patients were worse (group 2), as the pronounced decrease in contamination by pathogenic staphylococci and streptococci took place only in 9 -10 days.

Sinupret promoted sulcus bacterization decrease in CGCG children (group 1) at 98.8 ± 1.2% of cases immediately after treatment. Low streptococcus CFU was recorded on both 15 and 30 days after completion of CGCG without CT complex treatment. Elimination of the disease etiologic factor ensured the complete elimination of the inflammatory process in the marginal part of gums in all sick children.

So, we obtained new data on the etiologic significance of staphylococcal infection in a greater degree and less streptococcal in the development of CGCG in children with CT.

Etiotropic therapy used (Imupret) reduced the average bacterization of sulcus immediately after treatment with CFU of *S. aureus* by 74.6 ± 1.2%, CFU of *S. epidermalis* by 73.3 ± 0.3%, CFU *Streptococcus A* by 96 , 3%. Use of Imupret as antibacterial therapy in 70% of sick children was accompanied by decrease in the number of microorganisms from 10^6 - 10^8 CFU to 10^1 CFU. Complete elimination of inflammation in the marginal part of gum was induced. Sinupret used locally at the background of general immunotherapy provided the stability of sulcus microflora for a long time after treatment. Local application of Listerine and Imupret at the background of the general immunotherapy by Imupret in CGCG patients (group 3) contributed to the greatest reduction of sulcus bacterization. So, immediately after treatment CFU *S. aureus* decreased by 100%, and CFU *S. epidermalis* decreased by 98.9 ± 3.1%. In 15 and 30 days sulcus bacterization did not increase significantly. This can easily be explained by the best clinical results of complex therapy in CGCG patients.

To summarize, it is necessary to emphasize that complete recovery in the 3rd group patients took place in 95.6% of cases under the influence of the medical complex developed. The rest 4.4% of the patients demonstrated a significant improvement of inflammatory

process course in paradontium marginal part. All convalescents showed normalization of spontaneous and induced leukocytes phagocytic activity, content of immunocompetent cells (T, B, D, O-lymphocytes), Ig M and secretory Ig A levels. And conversely, in the incomplete inflammation patients, the laboratory tests parameters did not bounce back.

Conclusions. The therapeutic complex which concludes local application of Listerine, Imupret and systemic effect of the latter, has more effective influence on peridental tissues in CGCG patients at the background of CT.

When treated with another complex, included Sinupret local and systematic action, laboratory indexes of oral cavity local immunity bounced back less quick. The complexes developed may be used as alternative ones to already known therapeutic complexes for the treatment of CGCG in children at the background of CT.

The presence of tonsillar infection foci alters sulcus biocenosis and staphylococcal infection increases up to 87.5%.

The pathogenic staphylococcal microflora of sulcus in concentrations 10^4-10^{10} CFU cm^2 of substrate in CGCG patients leads to a harmful effect and causes significant deficit of local immune and nonspecific protective responses.

Depending on sulcus biocenosis the clinical course of CGCG may be either subacute or chronic.

To correct violations of immune and nonspecific protective factors at the local level, it is advisable to include in the treatment complexes of CGCG patients without concomitant pathology Sinupret, both exo- and endogenically, and for patients with tonsillar focus of infection - Imupret together with etiotropic antibacterial therapy, and topically Listerine and Imupret.

Topical application of Listerine and Imupret combination is effective and both for the elimination of sulcus microbial contamination in CGCG children and reduction of marginal paradontium swelling in a short time (3-4 days).

The method of CGCG treatment against CT background makes it possible to shorten treatment by an average of 5.5 days and increase the overall effectiveness of complex therapy by 29%.

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Appendix

SINUPRET:

a) Radix Gentianae ;

b). Flores Primulaecum Calycibus ;

c). Herba Rumicis;

d). Flores Sambuci;

e). Herba Verbenae

IMUPRET:

a). Radix Althaeae;

b). Herba Equiseti;

c). Flores Chamomillae;

d). Folia Juglandis

e). Cortex Quercus

f). Herba Millefolii;

g). Herba Taraxaci.