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THE TREATMENT OF PERIODONTAL DISEASE IN CHILDREN WITH DIFFUSE NONTOXIC GOITER

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SUMMARY

Key words: children, gingivitis, diffuse nontoxic goiter, method of treatment.

The aim of the study is substantiation of reasonability to use macro- and trace element-containing medicines, glucosamine in the complex of treatment of chronic catarrhal gingivitis in children afflicted with diffuse nontoxic goiter.

For this purpose clinical follow-up of 60 children aged 12 suffering from diffuse nontoxic goiter and chronic catarrhal gingivitis was conducted. The children were divided into two groups: the comparison group receiving generally excepted method of treatment, and the group of observation with the suggested improved method of treatment. The latter included additional general treatment including vitamin-mineral preparation "Calcemin advance" as well as glucosamine to eliminate deficiency of proteoglycan structural elements. "Calcemin advance" was administered in the dose of 1 tablet once a day while taking meals during 1 month twice a year. To eliminate glucosamine deficiency the medicine "Theraflex" was used according to the dose indicated: for children older than 12 – 1 capsule three times a day during 1 month followed by 1 capsule twice a day during 1 month while taking meals. The course of treatment was repeated twice a year.

Conclusion. The use of the medicines "Calcemin advance" and "Theraflex" in the complex of treatment of chronic catarrhal gingivitis in children with diffuse nontoxic goiter was indicative of reduced terms of treatment and increased terms of remission. The results obtained give the reasons to recommend the use of these medicines with the aim to correct metabolism of the connective tissue complex in case of inflammatory diseases of the periodontal tissues in children with diffuse nontoxic goiter in particular. Considering the terms of relapses in the groups observed, repeated therapeutic-preventive courses are recommended with the frequency once in six months.

РЕЗЮМЕ

ЛЕЧЕНИЕ ЗАБОЛЕВАНИЙ ПАРОДОНТА У ДЕТЕЙ С ДИФфуЗНЫМ НЕТОКСИЧЕСКИМ ЗОБОМ

Ключевые слова: дети, гингивит, диффузный нетоксический зуб, метод лечения.

Целью исследования является обоснование целесообразности применения препаратов макро- и микроэлементов, глюкозамина в комплексе лечения хронического катарального гингивита у детей, страдающих диффузным нетоксическим зобом.

Поведено клиническое наблюдение за 60 детьми в возрасте 12 лет, больных диффузным нетоксическим зобом и хроническим катаральным гингивитом, которые были разделены на группу сравнения, где лечение осуществлялось общепринятым методом, и группу наблюдения, где детям предлагался усовершенствованный метод лечения. Последний включал в себя дополнительно общее лечение, в состав которого входили витаминно-минеральный препарат «Кальцемин аванс», а также препарат глюкозамина для устранения дефицита структурных элементов протеогликанов. «Кальцемин аванс» применялся по 1 таблетке 1 раз в сутки во время еды в течение 1 месяца 2 раза в год. Для устранения дефицита глюкозамина применяли препарат «Терафлекс» за дозировкой производителя: детям от 12 лет по 1 капсуле 3 раза в день в течение 1 месяца, в дальнейшем по 1 капсуле 2 раза в день в течение 1 месяца во время приема пищи. Курс лечения повторялся 2 раза в год.

Выводы. Применение препаратов «Кальцемин аванс» и «Терафлекс» в комплексе лечения хронического катарального гингивита у детей с диффузным нетоксическим зобом показало сокращение сроков лечения и увеличение сроков ремиссии заболевания. Полученные результаты дают основания рекомендовать применение данных препаратов с целью коррекции метаболизма соединительнотканного комплекса при воспалительных заболеваниях тканей пародонта у детей, в частности при диффузном нетоксическом зобе. Учитывая сроки рецидивов в группах наблюдения, рекомендуется проводить повторные лечебно-профилактические курсы с частотой 1 раз в полгода.

Problem statement and analysis of recent studies.

Nowadays the problem of thyroid pathology, its effect on the state of health and intellectual development of the population, first of all children, is rather topical

[8, 9]. Chronic disorder of the thyroid status undoubtedly has its impact on the course of main dental diseases, which cannot but be considered on the stages of diagnostics and treatment. Literary data are indicative

of a number clinical observations of patients having comorbid dental and thyroid pathology [1]. However, the issues of a comprehensive correction of metabolic disorders in such patients remain problematic.

Individual iodine prevention is known to be recommended to increase efficacy of treatment of chronic catarrhal gingivitis in young patients with diffuse enlargement of the thyroid gland in the complex of traditional treatment [6]. Iodine-containing toothpaste "Elam-Dent" is recommended to be used for oral hygiene [7].

O.V. Pavlenko et al. suggest to use in the complex of treatment Iodice-Calendula topically, and Iodice-Concentrate in the combination with Calcium-D₃ Nycomed internally, with the purpose to increase the efficacy of treatment of generalized periodontitis against endocrine-immune pathology caused by iodine deficiency [4]. A method of a comprehensive treatment of generalized periodontitis, including Calcium-D₃ Nycomed and Phytor, against comorbid pathology of the thyroid gland is suggested [2].

Objective - substantiation of reasonability to use macro- and trace element-containing medicines, glucosamine in the complex of treatment of chronic catarrhal gingivitis (CCG) in children afflicted with diffuse nontoxic goiter.

Materials and methods. Clinical follow-up of 60 children aged 12 with the established diagnosis of chronic catarrhal gingivitis was conducted. All the children had comorbid pathology – diffuse nontoxic goiter. The periodontal tissue condition was estimated by the findings of clinical indices and tests: oral index of hygiene OIH-S (J.C. Green, J.R. Vermillion, 1964), gingival index PMA (C. Parma, 1960), periodontal index CPITN (WHO, 1989), bleeding index (H.R. Muhlemann, S.Son, 1971), Shiller-Pisarev tests.

To study the efficacy of the therapeutic method suggested two groups of observation and comparison

were formed (30 persons each). Children from the comparative group received generally excepted treatment including sanitization, professional hygiene of the oral cavity with teaching hygienic skills, antiseptic and anti-inflammatory therapy. In the comparative group in addition to the mentioned means general therapy was conducted including a comprehensive vitamin-mineral medicine containing calcium and the main essential trace elements as well as glucosamine to eliminate deficiency of proteoglycan structural elements. "Calcemin advance" was taken as a vitamin-mineral medicine. The following doses of the drug were administered: 1 tablet once a day while taking meals during 1 month twice a year. To eliminate glucosamine deficiency the medicine "Theraflex" was used according to the doses indicated: for children older than 12 – 1 capsule three times a day during a month followed by 1 capsule twice a day during 1 month while taking meals. The course of treatment was repeated twice a year.

To estimate the condition of the periodontal connective tissue elements in children examination of the oral secretion was made. The level of general protein by Lowry O.H. method, concentration of glycoproteins by E.G.Romanenko method [5], concentration of hexosamines by Elson L., Morgan W. method [3], sialic acids by Warren L. Method [3] were detected. The intensity of collagen exchange processes was estimated by the content of free and conjugated oxyproline by the reaction with p-dimethylaminobenzaldehyde [3].

The data obtained were processed statistically by means of variation statistics method using Student criterion.

Results and discussion.

Index evaluation of the periodontal tissues condition is presented in Table 1, and it is indicative of the uniformity of choosing the groups of observation and comparison by their clinical signs.

Table 1

Index evaluation of the periodontal tissues condition in children of the groups observed, M±m

Indices	Groups of children	Before treatment	After treatment	In 6 months	In 12 months
Hygienic index, OHI-S	Observation	1,87±0,14	0,42±0,05 *	0,98±0,09	0,85±0,06
	Comparison	1,75±0,12	0,43±0,05 *	0,93±0,07	0,84±0,05
PMA index, %	Observation	41,13±1,79	1,08±0,39 *	8,86±0,99	5,21±0,75
	Comparison	44,97±1,59	5,22±0,75 *•	27,77±1,91 *	24,99±1,66 *
Shiller-Pisarev test, score	Observation	1,51±0,07	0,12±0,04 *	0,50±0,07	0,39±0,04
	Comparison	1,67±0,07	0,38±0,05 *•	1,21±0,06 *	1,15±0,06 *
Index of bleeding, score	Observation	1,34±0,10	0 *	0,39±0,05	0,29±0,05
	Comparison	1,44±0,08	0,29±0,05 *•	1,13±0,07 *	1,04±0,06 *

Notes: 1. *- reliable difference of indices between the groups of observation and comparison, p<0,05; 2. • – reliable difference of the indices in the groups before and after treatment, p<0,05.

The results of biochemical examination of the oral fluid in children are presented in Table 2. Protein content in the oral fluid of children from both groups at the beginning of treatment was high. The same ten-

dency was peculiar for the concentration of free oxyproline and sialic acids. On the contrary, the level of glycoproteins and hexosamine was characterized by a reduced concentration of these metabolites.

Table 2

Biochemical indices of the oral fluid in children of the groups observed, M±m

Indices	Groups of children	Before treatment	After treatment
General protein, mg/ml	Observation	3,43±0,14	2,0±0,07 •
	Comparison	3,28±0,21	2,63±0,18 *•
Free oxyproline, mkg/ml	Observation	0,29±0,02	0,21±0,01 •
	Comparison	0,31±0,03	0,28±0,02 *•
Oxyproline conjugated with protein, mkg/ml	Observation	0,49±0,03	0,64±0,05 •
	Comparison	0,48±0,04	0,57±0,04 *•
Glycoproteins, mg/ml	Observation	0,04±0,02	0,18±0,01•
	Comparison	0,03±0,01	0,15±0,01 *•
Hexosamines, mmol/L	Observation	0,39±0,02	0,68±0,05 •
	Comparison	0,41±0,03	0,58±0,05 *•
Sialic acids, mmol/L	Observation	0,26±0,02	0,14±0,01 •
	Comparison	0,23±0,02	0,15±0,01*•

Notes: 1. *- reliable difference of indices between the groups of observation and comparison, $p < 0,05$; 2. • – reliable difference of the indices in the groups before and after treatment, $p < 0,05$.

The use of the medicines “Calcemin advance” and “Theraflex” in the complex of treatment of CCG has resulted in quick reversible development of clinical signs. Thus, in children of the group of observation hyperemia, swelling and bleeding regressed on the 3-4th days of treatment, and the period of correction lasted $6,2 \pm 0,21$ days against $9,3 \pm 0,51$ days in case the standard method of treatment was applied.

Clinical examination of children after the course of therapy (the 14th day) found a complete elimination of pathological process in the gums treated by means of the improved method of treatment. On the contrary, in the groups of comparison inflammatory signs remained in 75% of children. The condition of the periodontal tissues by the findings of PMA, CPITN indices, bleeding, dental tartar and Shiller-Pisarev test in dynamics are presented in Table 1.

Clinical changes detected were proved by the results of paraclinical examination of the oral cavity of children at the end of treatment (Table 2). A reliable difference between the indices in the groups observed before and after therapeutic correction was found. The indices of the connective tissue condition in children of the group of observation at the end of treatment were similar to those of the control, at the same time, in children from the group of comparison they were much worse and differed from the control findings. It is indicative of incomplete restoration of the normal functioning of the connective tissue complex in case generally excepted method of treatment is applied, and is in favour of the suggested method of a comprehensive therapy.

Clinical examinations of children of both groups showed the following results. In children receiving a comprehensive therapy relapses of the disease with primary inflammatory signs without bleeding were found in 30%. At the same time, in the groups of comparison relapses of CCG were detected in 100% of the examined children.

Examination of children in half a year detected relapses of CCG in all the groups of examination. Although, the degree of lesion of the periodontal tissues in children of the groups of observation and comparison was different. Availability of relapses, especially in children from the group of comparison, to our minds, is connected with duration of the underlying disease in the organism of a child. However, introduction of the suggested medicines into the complex of treatment of CCG makes the remission much longer which is indicative of their pathogenetic action.

Conclusions. The use of medicines “Calcemin advance” and “Theraflex” in the complex of treatment of CCG in children with diffuse nontoxic goiter has resulted in reducing the period of treatment and increasing the terms of remission of the disease. The results obtained enable us to recommend these medicines with the aim to correct metabolism of the connective tissue complex in case of inflammatory periodontal diseases in children, in case of diffuse nontoxic goiter in particular. Considering the terms of relapses in the groups observed, repeated therapeutic-preventive course is recommended to be carried out once in half a year.

Prospects of further studies in this direction. The study of the effect of macro- and trace elements, glucosamine for normalization of metabolic processes in the periodontal tissues in case of thyroid pathology in children of various age groups is being planned.

References:

1. Horzov I.P., Potapchuk A.M. Environmental aspects of dental caries and periodontal disease. Uzhhorod; 1998 (in Ukrainian).
2. Melnyk N.S., Mazur I.P. A method of treating periodontal diseases with thyroid dysfunction using the drug “Fitor”. *Arkhiv klinichnoi medytsyny*. 2006; 2: 97-8 (in Ukrainian).

3. Orehovich V.N. Modern methods in biochemistry. Moscow; 1977 (in Russian).

4. Pavlenko A.V., Bernadskaja G.B., Shmel'ko M.L. Influence Jodis-concentrate on the state of periodontal tissue in the postoperative period. Stomatolog. 2014; 3(14): 8-14 (in Russian).

5. Romanenko E.G., Klenina I.A. A method of determining common salivary glycoproteins. Svet mediciny i biologii. 2012; 4: 91-3 (in Russian).

6. Sarafanova A.B., Pisarevskij Ju.L., Koval'skij Ju.G. The thyroid status of young people with chronic catarrhal gingivitis in the conditions of natural iodine de-

ficiency. Dal'nevostochnyj medicinskij zhurnal. 2010; 2: 94-6 (in Russian).

7. Sutaeva T.R., Abdurahmanov A.I., Abusuev S.A. Features of treatment of chronic generalized periodontitis in patients with endemic goiter. Vestnik novyh medicinskih tehnologij. 2010; 1: 121-2 (in Russian).

8. Bost M., Martin A., Orgiazzi J. Iodine deficiency: Epidemiology and nutritional prevention. Trace elements in medicine. 2014; 4: 3-7.

9. Zimmermann M.B., Boelaert K. Iodine deficiency and thyroid disorders. Lancet Diabetes Endocrinol. 2015; 12: 76-9.

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ENTEROCOLITA ULCERO-NECROTICĂ LA PREMaturi

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SUMMARY

NECROTISING ENTEROCOLITIS IN PREMATURE BABY

Key words: premature infants, necrotising enterocolitis (NEC).

Background: necrotising enterocolitis is common in premature infants.

Aim of the study: study of incidence, risk factors, clinical evolution, laboratory and treatment methods used in premature infants with NEC.

Results. NEC's incidence among premature infants with gestational age of $\leq 31-29$ sg cases reach 50%. First place between associated NEC pathologies is nosocomial infection – 63,6% of cases (14 children). NEC specific clinical sign was abdominal distension in 90,9% cases (20 children), laboratory signs were characteristic of an infectious process: immature neutrophils to total neutrophils ratio $> 0,25$ 68,2% -in cases (15 children), CRP ≥ 12 - in 59,1% cases (13 children), leukocytosis/leukopenia - 45,4% of cases (10 children). Intestinal pneumatosis is specific radiological signs of NEC determined in 90,9% cases (20 children). Lethality after surgery treatment was 100%.

Conclusions. NEC it is a pathology characteristic for premature infants. Initiation of enteral feeding with breast milk, antibacterial therapy reduction and prevention of nosocomial infection could reduce the incidence of NEC.

РЕЗЮМЕ

ЯЗВЕННО-НЕКРОТИЧЕСКИЙ ЭНТЕРОКОЛИТ У НЕДОНОШЕННЫХ ДЕТЕЙ

Ключевые слова: недоношенные дети, язвенно-некротический энтероколит (ЯНЭК).

Цель исследования: изучение заболеваемости, факторов риска, клинического и лабораторного течения, методов лечения используемых для недоношенных детей с ЯНЭК.

Результаты: Заболеваемость ЯНЭК среди недоношенных детей с гестационным возрастом $\leq 31-29$ нг. достигает 50%. Характерным клиническим признаком для ЯНЭК в 90,9% случаев (20 детей) было вздутие живота, из лабораторных признаков характерные данные для инфекционного процесса: соотношение молодых форм нейтрофилов/зрелым $> 0,25$ - в 68,2% случаев (15 детей), уровень С-реактивного белка ≥ 12 мг/л - в 59,1% случаев (13 детей), лейкоцитоз/-пения в 45,4% случаев (10 детей). Характерный рентгенологический признак ЯНЭК-кишечный пневматоз был определен в 90,9% случаев (у 20 детей). Летальность после хирургического вмешательства составила 100%.

Выводы. ЯНЭК является патологией характерной для недоношенных детей. Высокий индекс подозрениз развития ЯНЭК имеет решающее значение в диагностике у детей из группы риска. Иницирование энтерального питания грудным молоком, рациональное назначение антибиотиков и профилактики внутрибольничной инфекции может снизить заболеваемость ЯНЭК.