

Реферати

ОСОБЕННОСТИ ТЕЧЕНИЯ ПОСЛЕОПЕРАЦИОННОГО ПЕРИОДА У ЖЕНЩИН С МИОМОЙ МАТКИ ПОСЛЕ ЭМБОЛИЗАЦИИ МАТОЧНЫХ АРТЕРИЙ

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Целью работы было изучить особенности течения послеоперационного периода у женщин с лейомиомой матки после эмболизации маточных артерий. Проведены наблюдения 94 женщин с лейомиомой, которым проведена эмболизация маточных артерий на базе гинекологического отделения КП «ПОКБ им. Н. В. Склифосовского Полтавского областного совета». У всех больных наблюдался постемболизационный синдром легкой и средней степени тяжести, продолжавшийся около 4 суток. В 9,6% больных наблюдалась тошнота, повышение температуры до 37,8° С. Затрудненное мочеиспускание в 45,75% пациентов. Проанализированы отдаленные последствия эмболизации маточных артерий. Экспульсия миомы - 6,4%. Консервативная миомэктомия в 4 случаях. Не зафиксировано изменений в функции яичников у женщин репродуктивного возраста. Риск возникновения осложнений незначительный, но нуждается в профилактике. Мониторинг в послеоперационном периоде позволяет выявить постэмболизационные осложнения. Эмболизация маточных артерий существенно не влияет на функцию яичников у пациенток репродуктивного возраста.

Ключевые слова: лейомиома матки, эмболизация маточных артерий, постемболизационный синдром, малоинвазивные вмешательства.

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PECULIARITIES OF POSTOPERATIVE PERIOD IN WOMEN WITH UTERINE LEIOMYOMA AFTER UTERINE ARTERY EMBOLIZATION

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The purpose of the work was to assess the peculiarities of postoperative course after uterine artery embolization (UAE) in women with uterine leiomyoma. The total of 94 medical observations of women with uterine leiomyoma treated by UAE were performed at the gynecological department of Poltava Regional Clinical Hospital. All patients had light to moderate postembolization syndrome lasting approximately 4 days. Nausea and the rise of body temperature up to 37.8°C were observed in 9.6% of patients. 45.75% of women had impaired urination. Long-term results after UAE were analyzed. Fibroid expulsion was observed in 6.4% of women. Myomectomy was performed in 4 cases. No changes in ovarian function in women of reproductive age. The risk of complications is negligible, but implies prophylactic measures. Postoperative monitoring allows to detect postembolization complications. Uterine arterial embolization does not substantially affect ovarian function in reproductive age patients

Keywords: uterine leiomyoma, uterine artery embolization, postembolization syndrome, non-invasive treatment.

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CORRELATION BETWEEN IMMUNOLOGICAL INDEXES OF THE ORAL LIQUID IN CHILDREN WITH CHRONIC CATARRHAL GINGIVITIS

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Human pathology arising from changes in ecological homeostasis is considered as an ecological pathology, and according to the literature, about 8-9% of all diseases can be considered as eco-caused, moreover, in economically developed countries this figure is significantly higher. In order to assess the adaptive capabilities of the children's organism and to determine the risk factors for the development of a periodontal tissue lesion the immunological parameters of the oral liquid were studied, correlation analysis between the indices of oral liquid immunological status in children, their age and place of residence was carried out. Results of the performed study show that in children of both groups suffering from chronic catarrhal gingivitis the concentration of immunoglobulins decreases with age increase, the number of leukocytes and the level of pro-inflammatory cytokines significantly grows, while the level of anti-inflammatory cytokines decreases, but these processes were more pronounced in children from ecologically unfavorable regions.

Key words: children, gingivitis, oral liquid, immunoglobulins, cytokines, leukocytes, ecological situation.

The work is a fragment of the research project "Pathogenetic approaches to the treatment of major dental diseases on the basis of the study of mechanisms of damage to the tissues of the oral cavity on the background of concomitant somatic pathology", state registration No. 0116U005076.

The territory of Lviv region is characterized by various levels of anthropogenic load of the environment and natural climatic, geographic and geochemical conditions (deficiency of fluorine, iodine, selenium, zinc, etc.) [6]. Adverse factors of the environment provoke an increase in the prevalence of caries, non-carious lesions, dentoalveolar anomalies, periodontal diseases. In conditions of fluoride and iodine deficiency in water and food, children develop abnormalities in physical development, hypothyrosis, dental caries, and violation of immune mechanisms [1, 2].

A sufficiently powerful industrial-agrarian complex has been formed on this territory, which is one of the factors of destabilization of the ecological situation and is connected with the functioning of large enterprises in the mining, chemical and fuel-energy industries. According to the data [3] on the total level of environmental pollution, the territory of Lviv region refers to the contaminated. Pollution of soils with mineral fertilizers is high, with pesticides – is dangerous, and pollution of atmospheric air with carbon monoxide, nitrogen dioxide, organic compounds, and metals is elevated.

The environment plays a significant role in the occurrence of dental diseases. The numerous studies have shown that dental caries in children living in a polluted environment occurs in 88,3% - 100%, and the prevalence of periodontal disease ranges from 14,3% to 77,2%. In children among the inflammatory diseases of periodontal tissues prevails chronic catarrhal gingivitis (CCG), its prevalence is from 18,5% to 85,0% in different age periods [7].

It is known, that the mechanism of the onset of inflammatory processes in the periodontal tissues is caused by many factors, the main of which are unsatisfactory hygiene of the oral cavity; somatic diseases; environmental pollution [2, 5]. Studies show that the disturbance of immune mechanisms, which are the pathogenetic basis for the development of periodontal disease in children, is of particular importance in the development of pathological conditions in children living in unfavourable environmental conditions and micronutrient deficiencies [4, 8]. Therefore, studies, which are aimed at elucidating the pathogenetic mechanisms of the development of pathological processes in the periodontium in children living in various environmental conditions, are relevant.

The purpose of the study was to determine the content of immunoglobulins, cytokines, leukocytes in the oral liquid of children with chronic catarrhal gingivitis living in contaminated areas and territories with fluoride and iodine deficiencies.

Materials and methods. To solve the set goals and objectives, a dental examination of 120 schoolchildren (the main group) from the towns of Yavoriv and Zhydachiv in Lviv region was conducted, which are characterized by a high total contamination level, as well as iodine and fluoride deficiency (EPR). The comparison group comprised 80 children from the city Lviv, which ecological state was characterized as a "conditionally clean" region (ECR). The examination was conducted in key age groups of 7, 12, 15 years in accordance with the WHO recommendations. The evaluation of the state of periodontal tissues in children was carried out on the basis of clinical data and levels of periodontal indices. When establishing the diagnosis, the classification of periodontal disease by M. F. Danilevsky (1994) was used. The papillary-marginal alveolar index (PMA) was used to determine the intensity of the periodontal inflammatory process (G. Parma, 1960; Masler, 1967). The intensity of gingival hemorrhage was assessed by H. P. Mühlemann and S. Son index (1971). The Community Periodontal Index (CPI) was used to assess the depth of the periodontal tissue lesions (WHO, 1998). The state of hygiene of the oral cavity was determined using the Yu. A. Fedorov - V. V. Volodkina index (1974) [5]. In order to assess the adaptive capacity of the child's organism and to determine the risk factors for the onset of periodontal tissue damage, the following immunological parameters of the oral liquid were investigated: leukocyte count in the Goryaev chamber; concentration of IL-1 β , IL-6, TNF- α , IL-4, TGF- β 1 cytokines by immunological analysis using the commercial kits "Best Vector" and Quanticine system (USA); content of immunoglobulins A, M, G by means of radial immunodiffusion in agar by G. Mancini et. al. (1965) using the diagnostics of the NGO "Microgene" (Nizhny Novgorod, Russia).

Statistical processing of the results was carried out with the help of application packages for statistical analysis of medical and biological data from Statgraphic (Manugistics, Inc., 1992) and Instat (Graph Pad Software Inc., 1993). The following methods were used in the processing of the indicators: analysis of frequency distributions, estimation of reliability of the obtained results by Student's t-test, calculation of correlation coefficients.

Results of the study and their discussion. The results of our clinical studies showed a significant influence of the environmental pollution and geochemical features of the territory on the condition of periodontium, therefore, we considered it necessary to conduct immunological studies of the oral liquid to assess the pathogenetic mechanisms of the development of inflammatory processes in periodontal tissues. We have examined the content of pro-inflammatory IL-1 β , IL-6, TNF- α and anti-inflammatory IL-4, TGF- β 1 cytokines, the level of immunoglobulins A, M, G and the leukocyte count in the oral liquid of children. We have found that while age of children with CCG increased, regardless of the place of their residence, the concentration of immunoglobulins in their oral liquid decreased (table 1). So, as the content of IgA in the oral liquid of 7 year-old children living in an ecologically polluted region was $7,88 \pm 0,015$ g/l, then in 12 year-olds the IgA concentration decreased to $0,661 \pm 0,014$ g/l, reaching the minimum values in 15 year-olds – $0,467 \pm 0,015$ g/l.

In children with CCG living in ecologically clean areas concentrations of IgA decreased from $1,179 \pm 0,011$ g/l in 7-year-olds to $1,150 \pm 0,012$ g/l in 12-year-olds. The lowest value of IgA concentration was revealed in 15-year-olds – $0,933 \pm 0,014$ g/l.

The content of immunoglobulins in the oral liquid of the examined children, depending on age (g/l)

Age (years)	Main group			Comparison group		
	IgA	IgM	IgG	IgA	IgM	IgG
7	0.878±0.015	0.869±0.012	0.943±0.012	1.179±0.011	1.110±0.010	1.100±0.012
12	0.661±0.014* √	0.725±0.011* √	0.749±0.011* √	1.150±0.012* √	0.928±0.011√	0.973±0.010√
15	0.467±0.015* √	0.635±0.011* √	0.676±0.010* √	0.933±0.014* √	0.855±0.011√	0.855±0.012√
Mean values	0.668±0.015*	0.743±0.011*	0.789±0.011*	1.087±0.013	0.964±0.011	0.979±0.011

Notes: 1. Significant difference between the main and the comparison groups * – $p < 0,05$. 2. Significant difference in comparison with data of 7-year-old children √ – $p < 0,05$.

The IgM content in the oral liquid of children with chronic catarrhal gingivitis in the main group decreased from 0.869±0.012 g/l in 7-year-olds to 0.725±0.011 g/l in 12-year-old children. It should be noted, that in the 15-year-old teenagers with CCG residents of the ecologically polluted region, a low value of this indicator was observed, which was 0.635±0.011 g/l.

In children with chronic catarrhal gingivitis living in ecologically clean region, the decrease of IgM concentration in the oral liquid was less pronounced. We have found that the IgM content in the oral liquid decreased from 1.110 ± 0.010 g/l in 7-year-olds to 0.928 ± 0.011 g/l in 12-year-old children. A minimum mean value of IgM content in oral liquid was registered in 15-year-old adolescents of the comparative group 0.855±0.011 g/l.

Analysis of the concentration of IgG in the oral liquid of children living in the territory with a high level of contamination, as well as iodine and fluorine deficiencies revealed that the highest value of IgG was found in 7-year-old children 0.943±0.012 g/l. The values of IgG concentration were decreasing, while the children's age was increasing in 12-year-old children of the main group it decreased to 0.749±0.011 g/l, in 15-year-old adolescents to 0.676±0.010 g/l.

In children with CCG of the comparative group, the changes in IgG concentration in the oral liquid were similar: a decrease in IgG concentration from 1.110±0.012 g/l in 7-year-old children to 0.973±0.010 g/l in 12-year-old children, with minimal values (0.855±0.012 g/l) in 15-year-olds was registered.

It was established that in children with chronic catarrhal gingivitis living in EPR, the content of proinflammatory cytokines was higher, in comparison with the data obtained in children, who lived in "clean" territory. With the increase of the children's age, the level of proinflammatory cytokines has increased in both groups, but in children from the ecologically polluted region this trend was more pronounced. Thus, the concentration of IL-1β in the oral liquid of 15-year-old adolescents of the main group was 125.51±0.63 pg/ml, which was higher than in 12-year-old children (112.86±0.62 pg/ml) and 1,3 times higher than in 7-year-old children of the same group (95.56±0.62 pg/ml). The level of production of IL-1β in 15-year-old children of the comparative group exceeded the data of 7-year-old children by 1,2 times, amounting to 112.18±0.62 pg/ml versus 90.23±0.61 pg/ml, and exceeded the data of 12-year-olds (104.09±0.62 pg/ml) (table 2).

Table 2

The content of cytokines in the oral liquid of the examined children (pg/l)

Age	Main group					Comparison group				
	IL-1β	IL-6	TNF-α	IL-4	TGF-β1	IL-1β	IL-6	TNF-α	IL-4	TGF-β1
7	95.56 ±0.62*	14.63 ±1.41*	14.67 ±0.46*	8.78 ±0.38	8.0 ±0.26*	90.23 ±0.61	12.70 ±1.42	13.61 ±0.43	9.30 ±0.36	8.79 ±0.27
12	112.86± 0.62 * √	18.62 ±1.41 * √	18.37 ±0.45 * √	7.36 ±0.40 * √	6.56 ±0.24 * √	104.09± 0.62 √	13.85 ±1.40 √	15.65 ±0.44 √	8.61 ±0.38 √	8.26 ±0.30 √
15	125.51 ±0.63 * √	22.55 ±1.42 * √	21.94 ±0.46 * √	6.36 ±0.41 √	5.72 ±0.24 * √	112.18 ±0.62 √	17.78 ±1.42 √	20.10 ±0.42 √	7.42 ±0.38 √	7.33 ±0.27 √
Mean values	111.29 ±0.62*	18.60 ±1.41*	18.32 ±0.45*	7.50 ±0.40*	6.76 ±0.25*	102.17 ±0.62	14.78 ±0.41	16.45 ±0.43	8.44 ±0.37	8.13 ±0.29

Notes: 1. Significant difference between the main and the comparison groups * – $p < 0.05$. 2. Significant difference in comparison with data of 7-year-old children √ – $p < 0.05$.

The proinflammatory cytokine TNF-α index in children of both the main and comparison groups was increased and has been increasing in children of the main group from 14.67±0.46 pg/ml at 7 years of age to 18.37±0.45 pg/ml in 12-year-old children, reaching the maximum values in 15-year-olds, which was 21.94±0.46 pg/ml. The children of the comparison group had an increase in the concentration of TNF-α

from 13.61 ± 0.43 pg/ml in 7-year-olds to 15.65 ± 0.44 pg/ml, in 12-year-olds examined. The maximum mean value of this indicator in the comparison group was determined in 15-year-olds 20.10 ± 0.42 pg/ml.

The concentration of anti-inflammatory cytokine TGF- β 1 in the oral liquid of the children of the main group was lower, than in children of the comparison group, living in ECR (6.76 ± 0.25 pg / ml versus 8.13 ± 0.29 pg / ml). In the main group the level of TGF- β 1 in the oral liquid decreased from 8.0 ± 0.26 pg/ml in 7-year-olds to 6.56 ± 0.24 pg/ml in 12 year olds and to 5.72 ± 0.24 pg/ml in the 15-year-old adolescents. In the children of the comparison group, the concentration of TGF- β 1 in the oral liquid decreased from 8.79 ± 0.27 pg/ml at 7 years of age to 8.26 ± 0.30 pg/ml in 12-year-olds examined and up to 7.33 ± 0.27 pg/ml in adolescents aged 15 years. The leukocyte count in the oral liquid of children with chronic catarrhal gingivitis, living in territories with different anthropogenic loads, is presented in table 3.

Table 3

Leukocyte count in the oral liquid of examined children of different age groups (x 106 / l)

Age (years)	Main group	Comparison group
7	195.87 ± 4.21	156.75 ± 4.12
12	$253.19 \pm 4.22 \vee$	$191.87 \pm 4.10 \vee$
15	$290.27 \pm 4.21 \vee$	$249.01 \pm 4.10 \vee$
Mean values	246.44 ± 4.21	199.21 ± 4.11

Notes: Significant difference in comparison with data of 7-year-old children $\vee - p < 0.05$.

As it can be seen from the data presented, leukocyte count in the oral liquid of 7-year-olds of the main group is 195.87 ± 4.21 106/l. In 12-year-old children with CCG, the number of leukocytes was bigger and amounted to 253.19 ± 4.22 106/l, reaching the maximum values in 15-year-old adolescents of the main group – 290.27 ± 4.21 106/l. At the same time, it was found, that in children with CCG living in EPR, who were adversely affected by the surrounding environment and fluoride and iodine deficiency, leukocyte counts in the oral liquid in all age categories were significantly higher than in children with CCG living in ECR. Thus, in the 7-year-old children from comparison group, the number of leukocytes in the oral liquid was 156.75 ± 4.12 106/l, however, in 12-year-olds the number of leukocytes in the oral liquid increased to 191.87 ± 4.10 106/l. The maximum mean value (249.01 ± 4.10 106/l) was obtained in 15-year-old children of the comparative group.

In order to study and analyze the relationship between the parameters of the immunological status of the oral liquid of children, their age and place of residence, we have calculated pairwise correlation coefficients between the indices of cytokines IL-1 β , IL-6, TNF- α , IL-4, TGF- β 1, immunoglobulins A, M, G and leukocyte count in children with chronic catarrhal gingivitis living in EPR (the main group). In the 7-year-olds children of the main group we've found statistically significant weak correlation links: negative - between IL-1 β and IgA, as well as positive - between IL-4 and TGF- β 1 (table 4).

Table 4

Correlation coefficients between the indices of cytokines, immunoglobulins and leukocyte count in 7-year-old children of the main group

Indices	Indices of 7-year-olds							
	IL-1 β	IL-6	TNF- α	IL-4	TGF- β 1	IgA	IgM	IgG
IL-1 β	1.00	0.15	0.10	0.16	0.07	-0.26*	-0.09	-0.14
IL-6	0.15	1.00	0.06	0.11	-0.12	-0.07	-0.03	0.12
TNF- α	0.10	0.06	1.00	-0.04	0.21	0.08	-0.20	0.02
IL-4	0.16	0.11	-0.04	1.00	0.29*	0.11	0.07	0.03
TGF- β 1	0.07	-0.12	0.21	0.29*	1.00	0.20	0.01	0.01
IgA	-0.26*	-0.07	0.08	0.11	0.20	1.00	0.18	-0.01
IgM	-0.09	-0.03	-0.20	0.07	0.01	0.18	1.00	0.19
IgG	-0.14	0.12	0.02	0.03	0.01	-0.01	0.19	1.00
Leukocyte count	-0.08	0.07	0.08	0.16	0.01	0.10	-0.13	0.02

Notes. * marked correlations are significant at $p < 0.05$

In order to assess the adaptive capabilities of the children's organism and to determine the risk factors for the development of a periodontal tissue lesion the following immunological parameters of the oral liquid were studied: the leukocyte count, the concentration of cytokines IL-1 β , IL-6, TNF- α , IL-4, TGF- β 1 and immunoglobulins A, M, G. Also, for studying and analyzing the relationship between the indicators of immunological status of oral liquid of children, their age and place of residence, a correlation analysis of these parameters was carried out [3, 6].

Conclusion

Thus, the performed studies show that in children with chronic catarrhal gingivitis, the concentration of IgA, IgM, IgG decreased while age increased, and in children from ecologically polluted regions the obtained values were lower than in children with chronic catarrhal gingivitis who did not experience negative environmental influences. Also, with age, a significant increase of the leukocyte count and an increase of the rate of the proinflammatory cytokines were revealed while there was a decrease of the levels of the anti-inflammatory cytokines. In children from ecologically polluted regions these processes were more pronounced, which was associated with the intensification of inflammatory processes in the children's periodontium as well as the prolonged action of the combined negative environmental factors.

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Реферат

КОРЕЛЯЦІЙНІ ВЗАЄМОЗВ'ЯЗКИ МІЖ ІМУНОЛОГІЧНИМИ ПОКАЗНИКАМИ РОТОВОЇ РІДИНИ У ДІТЕЙ З ХРОНІЧНИМ КАТАРАЛЬНИМ ГІНГІВІТОМ

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Патологія людини, що виникає у зв'язку із зсувами у екологічному гомеостазі, розглядається як екологічна патологія, а згідно з літературними даними, біля 8–9% усіх захворювань можуть бути розцінені як екозумовлені, причому у економічно розвинених країнах ця цифра є значно вищою. У даній роботі з метою оцінки адаптаційних можливостей організму дітей і визначення факторів ризику виникнення ураження тканин пародонта досліджували імунологічні показники ротової рідини, проведено кореляційний аналіз між показниками імунологічного статусу ротової рідини дітей, їх віком та місцем проживання. В результаті, проведені дослідження показують, що у дітей з хронічним катаральним гінгівітом концентрація імуноглобулінів знижується зі збільшенням віку, значно збільшується кількість лейкоцитів і підвищується рівень прозапальних цитокінів на тлі зниження рівня протизапальних цитокінів, у двох групах дослідження, однак у дітей з екологічно несприятливих регіонів цей процес носить більш виражений характер.

Ключові слова: діти, гінгівіт, ротова рідина, імуноглобуліни, цитокіни, лейкоцити, екологічна ситуація.

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КОРЕЛЯЦИОННЫЕ ВЗАИМОСВЯЗИ МЕЖДУ ИММУНОЛОГИЧЕСКИМИ ПОКАЗАТЕЛЯМИ РОТОВОЙ ЖИДКОСТИ У ДЕТЕЙ С ХРОНИЧЕСКИМ КАТАРАЛЬНЫМ ГИНГИВИТОМ

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Патология человека, возникающая в связи из изменениями в экологическом гомеостазе, рассматривается как экологическая патология, а согласно литературным данным, у 8-9% всех заболеваний могут быть расценены как экологически обусловленные, причем в экономически развитых странах эта цифра значительно выше. В данной работе для оценки адаптационных возможностей организма детей и определения факторов риска возникновения поражения тканей пародонта исследовали иммунологические показатели ротовой жидкости, проведен корреляционный анализ между показателями иммунологического статуса ротовой жидкости детей, их возрастом и местом жительства. В результате, проведенные исследования показывают, что у детей с хроническим катаральным гингивитом концентрация иммуноглобулинов снижается с увеличением возраста, значительно увеличивается количество лейкоцитов и повышаются провоспалительные цитокины на фоне снижения противовоспалительных цитокинов, в двух группах исследования, однако у детей из экологически неблагоприятных регионов этот процесс носит более выраженный характер.

Ключевые слова: дети, гингивит, ротовая жидкость, иммуноглобулины, цитокины, лейкоциты, экологическая ситуация.

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