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Реферати

ПРОФІЛАКТИКА АКУШЕРСЬКИХ УСКЛАДНЕНЬ У ЖІНОК З ГІПОВІТАМІНОЗОМ ГРУПИ В

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Представлені результати досліджень в групі жінок репродуктивного віку з дефіцитом вітамінів групи В, які отримували у комплексній профілактиці та лікуванні гестаційних ускладнень вітамінну терапію. Наведені дані порівняльної характеристики клініко-лабораторних спостережень з групою жінок, що приймали стандартну терапію. Обґрунтовано ефективність застосування запропонованого етіопатогенетичного підходу з метою профілактики і комплексної терапії гестаційних ускладнень.

Ключові слова: гестаційні ускладнення, вітаміни, профілактика.

Стаття надійшла 12.12.17 р.

ПРОФИЛАКТИКА АКУШЕРСКИХ ОСЛОЖНЕНИЙ У ЖЕНЩИН С ГИПОВИТАМИНОЗОМ ГРУППЫ В

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Представлены результаты исследований в группе женщин репродуктивного возраста с дефицитом витаминов группы В, которые получали в комплексной профилактике и лечении гестационных осложнений витаминную терапию. Приведены данные сравнительной характеристики клинико-лабораторных наблюдений в опытной группе с группой женщин, которые получали стандартную терапию. Обоснована эффективность применения предложенного етиопатогенетического подхода з целью профилактики и комплексноой терапии гестационных осложнений

Ключевые слова: гестационные осложнения, витамины, профилактика.

Рецензент Катрушов О.В.

DOI 10.26724/2079-8334-2019-2-68-85-91
UDC 618.3+618.7)] – 06:616.441 – 008.61:612.015.11

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CHANGES IN LIPID PEROXIDATION AND ANTIOXIDANT ACTIVITY IN PREGNANT WOMEN AND WOMEN IN LABOUR WITH DIFFUSE TOXIC GOITER

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In order to determine the dependence of lipid peroxidation activity on the severity of thyrotoxicosis as well as its effect on antioxidant defense in the mother-placenta-fetus system, 138 pregnant women with diffuse toxic goiter were examined, 65 patients had a mild form of diffuse toxic goiter, 64 – a moderate form and 9 –a severe one. The control group consisted of 30 women with a physiological course of pregnancy. The research was carried out in the third trimester of pregnancy as well as during the process of childbirth. The concentration of the initial and final products of free radical oxidation and antioxidant defense enzymes was determined. The obtained results indicate that one of the leading causes of thyrotoxicosis is the lack of antioxidant protection of the body, the indicators of which can serve as criteria for the severity of the disease and they can be used for monitoring the onset of perinatal complications in pregnant women with diffuse toxic goiter.

Key words: pregnancy, childbirth, peroxide oxidation of lipids, antioxidant activity, diffuse toxic goiter.

The work is a fragment of the research project "The improvement of obstetric care monitoring in idiopathic miscarriage of pregnancy", state registration No. 0117U001080.

In recent years, there has been evidence that diffuse toxic goiter (DTG) causes significant metabolic and functional changes in the body, in pathogenesis of which the significant importance is paid to the violation of the lipid peroxidation (LPO) and antioxidant defense system (AODS) [2,10].

However, the mechanisms of activation of lipid peroxidation in pregnant women with DTG are not studied out. It is known that the increased lipid peroxidation in tissues is not the result of direct action of thyroxine, since the latter has antioxidant activity in vitro [5,12]. It is essential that during the inhibition of lipidperoxidation, thyroxine in vitro turns into the inactive form of hormone - reversed triiodothyronine [3,9].

Several ways of activating lipid peroxidation in DTG can be identified. First of all, this process can be related to the increased oxygenation of tissues due to the enhanced use of oxygen, the increase in the generation of hydrogen peroxide in cells as the result of the increased microsomal and mitochondrial oxidation [4,8], increasing the concentration of the LPO substrate- free fatty acids [1] The indicated changes lead to the restructuring of the spatial organization of the membrane protein-lipid complex. The

latter is due to the fact that thyroxin not only enhances the synthesis of free fatty acids and increases the formation of monounsaturated fatty acids, but also contributes to the conversion of monosaturated to polyunsaturated fatty acids which are less resistant to oxidation [1,7].

The stimulation of LPO in tissues may be due to the decrease in the activity of the antioxidant defense system (AODS) in hyperthyroidism which occurs as a result of the decrease in the concentration of glutathione and the decrease in the number of SH-group proteins [6] as well as the deficiency of ascorbic acid in the body [7].

Constant monitoring of the contents of active forms of oxygen, free radicals and hydroperoxides, both enzymatic and non-enzymatic, clearly regulates lipid peroxidation reactions. The failure of such control leads to the increase in the processes of LPO and the accumulation of products of lipoperoxidationin the body, which is characterized by high reactivity. These products can systemically damage the cells [7].

The high content of lipid peroxidation products in biomembranes leads to the weakening of the barrier function and the increase in its permeability for organic matter and various ions. The products of lipoperoxidation cause a damaging effect on proteins, thiol compounds, deoxyribonucleic acid (DNA), nucleotide phosphates which ultimately negatively affect the vitality of a cell [1]. The leading factors in the disorganization of cellular metabolism in this case are the separation of oxidative phosphorylation in mitochondria, ion imbalance of a cell and the activation of lysosomal enzymes. The reduction of the activity of antioxidant enzymes and imbalance in this system can contribute to reducing the tissue resistance to LPO which, in turn, becomes a possible cause of the violation of the functional state of the thyroid gland [6,11].

The purpose of our study was to determine the dependence of the activity of free radical lipid oxidation on the degree of severity of thyrotoxicosis in pregnant women and women in labour, based on the determination of the malondialdehyde concentration (MDA), diene conjugates (DC), superoxide dismutase (SOD) enzymes and selenium-dependent glutathione peroxidase (GPO) which characterize the processes of glycolysis and the functional capacity of the antioxidant defense system.

Materials and methods. 138 pregnant women and a woman in labour with DTG (diffuse toxic goiter) were examined. The studies were conducted in women in the third trimester of pregnancy in the period of 37-40 weeks and during childbirth, examining lipid peroxidation and antioxidant defense system in the blood of women in labour and umbilical cord of newborns as well as the placental tissue were received immediately after delivery.

The group of pregnant women and women in labour with diffuse toxic goiter was distributed according to the severity of the disease, 65 patients of which had a mild form of DTG, 64 - moderate, 9 - severe. The control group included 30 women with a physiological course of pregnancy.

Clinical anamnestic, laboratory and statistical methods of examination were used in the course of the investigation.

The intensity of peroxide lipid oxidation (PLO) in the body of pregnant women was assessed by the content of malondialdehyde in blood plasma, which was determined by the reaction with tiabarbituric acid. This method determined the content of MDA in the blood of the umbilical cord of newborns and the placenta tissue.

The amount of diene conjugates of unsaturated fatty acids was determined in the blood plasma of a pregnant woman and venous blood of the umbilical cord and placenta tissue of newborns.

The status of antioxidant defense system in the body of pregnant women was assessed by the activity of selenium-containing glutathione peroxidase and superoxide dismutase in their blood, placenta tissue and umbilical cord blood of newborns.

The received data was processed by the method of variation statistics. The average value (M), the error of the arithmetic mean (m) were calculated. In order to assess the probability of the difference in the studied parameters which were compared by Student's t-test.

Results of the study and their discussion. As a result of the conducted research, it was found that the content of malondialdehyde (MDA) in erythrocytes and in blood plasma is significantly increasing at all degrees of severity of diffuse toxic goiter (DTG) (table 1).

It should be emphasized that more obvious changes in the content of MDA are observed in erythrocytes which causes the development of the hypoxic state of the tissues of both a mother and a fetus due to the harmful effect of peroxides on the erythrocyte membrane and the subsequent disintegration. The increase of MDA content in plasma may be due to its accumulation in the tissues of a mother and a fetus as well as with the disintegration of erythrocytes [1]. The characteristic feature is that the amount of MDA depends on the severity of the course of the disease - the more severe the course of diffuse toxic goiter, the higher its content in erythrocytes and plasma. In severe forms of diffuse toxic goiter, MDA in plasma

exceeds the control group indicators in almost 1.78 times, in erythrocytes in 2.86 times, respectively (table 1).

Table 1

The state of the oxidative stress of the lipid peroxidation - antioxidant defense system in the blood of women with the physiological course of pregnancy and in case of diffuse toxic goiter, M ± m

Examined groups		Contents			Activity	
		MDA_{pl}, μmol / l	MDA_{rbc}, μmol / ml	DC_{rbc}, μmol/10^{12er}	SOD_{pl}, units per mg of protein	GPO_{pl}, μmol NADF / min 1 g protein
Control group, n=30		5,842±0,167	0,764±0,013	7,811±0,161	0,613±0,024	4,612±0,157
Degree of severity of the diffuse toxic goiter	mild form, n=65	7,215±0,202 p_k<0,05	1,263±0,030 p_k<0,05	9,709±0,187 p_k<0,05	0,463±0,009 p_k<0,05	3,973±0,099 p_k<0,05
	moderate form, n=64	8,571±0,218 p_k<0,05 p_l<0,05	1,656±0,041 p_k<0,05 $p_л$<0,05	10,735±0,387 p_k<0,05 $p_л$<0,05	0,234±0,022 p_k<0,05 p_l<0,05	2,412±0,150 p_k<0,05 p_l<0,05
	severe form, n=9	10,436±0,333 p_k<0,05 p_l<0,05 p_m<0,05	2,191±0,158 p_k<0,05 p_l<0,05 p_m<0,05	11,941±0,342 p_k<0,05 p_l<0,05 p_m<0,05	0,121±0,019 p_k<0,05 p_l<0,05 p_m<0,05	1,579±0,134 p_k<0,05 p_l<0,05 p_m<0,05

Notes: probability of differences of the corresponding indicators relative to the control group of pregnant women;

p_k -

p_l - probability of differences of the corresponding indicators relative to the group of pregnant women with a mild form of diffuse toxic goiter;

p_m - the probability of differences of the corresponding indicators relative to the group of pregnant women with a moderate form diffuse toxic goiter.

The indication of the intensification of all links of lipid peroxidation (LPO) is to enhance the formation of diene conjugates (DC), one of the initial products of this process. The number of the latter naturally increases depending on the degree of severity of the course of diffuse toxic goiter (DCc = 7,811 ± 0,161; DCvT = 11,941 ± 0,342 μmol / 10^{12rbc}), however, as compared with MDA their number is much smaller (in 1.52 times). This is probably due to the fact that DC is an initial product which further is used to form MDA, one of the final products of LPO.

Interesting were the results of the study of LPO during the childbirth which was complicated by DTG (table 2). In this case, the content of MDA during the childbirth in all forms of thyrotoxicosis greatly exceeds the control indicators and in some mild forms of DTG $MDA_{rbc.lT}$ = 1,965 ± 0,052; in a moderate form - $MDA_{rbc.cT}$ = 1,95 ± 0,165; in a severe form - $MDA_{rbc.vT}$ = 3,426 ± 0,288 μmol / ml. In blood plasma, respectively, in a mild form of diffuse toxic goiter $MDA_{pl.lT}$ = 7,308 ± 0,154; in a moderate form - $MDA_{pl.lc}$ = 8,955 ± 0,322; in a severe form - $MDA_{pl.lB}$ = 13,164 ± 0,817 μmol / l.

Table 2

The state of the system of lipid peroxidation - antioxidant defense system in the blood of pregnant women during childbirth in the physiological course of pregnancy and in case of diffuse toxic goiter, M ± m

Examined groups		Contents			Activity	
		MDA_{pl}, μmol / l	MDA_{rbc}, μmol / ml	DC_{rbc}, μmol /10^{12er}	SOD_{pl}, units per mg of protein	GPO_{pl}, μmol NADF / min 1 g protein
Control group, n=30		6,745±0,118	0,935±0,025	8,113±0,214	0,718±0,024	6,107±0,235
Degree of severity of the diffuse toxic goiter	mild form, n=65	7,308±0,154 p_k<0,05	1,195±0,052 p_k<0,05	9,025±0,229 p_k<0,05	0,654±0,019 p_k<0,05	5,562±0,104 p_k<0,05
	moderate form, n=64	8,995±0,332 p_k<0,05 p_l<0,05	1,950±0,165 p_k<0,05 p_l<0,05	11,659±0,440 p_k<0,05 p_l<0,05	0,408±0,040 p_k<0,05 p_l<0,05	4,621±0,198 p_k<0,05 p_l<0,05
	severe form, n=9	13,164±0,817 p_k<0,05 p_l<0,05 p_m<0,05	3,426±0,288 p_k<0,05 p_l<0,05 p_m<0,05	15,362±0,638 p_k<0,05 p_l<0,05 p_m<0,05	0,172±0,010 p_k<0,05 p_l<0,05 p_m<0,05	3,551±0,349 p_k<0,05 p_l<0,05 p_m<0,05

Notes: probability of differences of the corresponding indicators relative to the control group of pregnant women;

p_k -

p_l - probability of differences of the corresponding indicators relative to the group of pregnant women with a mild form of diffuse toxic goiter;

p_m - the probability of differences of the corresponding indicators relative to the group of pregnant women with a moderate form diffuse toxic goiter.

It is likely that such intense formation of LPO products in the body of a woman with various forms of thyrotoxicosis negatively affects the state of a fetus, since in the venous blood of the umbilical cord

which enters a fetus in all forms of thyrotoxicosis, DC and MDA are significantly increasing. This determines the critical situation of vital processes in the body of a fetus. Thus, in the mild form of diffuse toxic goiter in cord venous blood, the content of MDA in erythrocytes is 1,102 ± 0,054 μmol / ml and, accordingly, the content of DC in erythrocytes is 7,447 ± 0,204 μmol / $10^{12\ rbc}$; in a moderate form the MDA is 1,441 ± 0,063 μmol / ml, and DC is 8,959 ± 0,285 μmol / 10^{12rbc}, in the severe form the MDA is 2,197 ± 0,014 μmol / ml, and DC is 13,419 ± 0,888 μmol / 10^{12rbc} (table 3).

The confirmation of this is the change in the products of the LPO in the placenta. Thus, in a mild form of DTG the MDA in the placenta is 114,070 ±4,544 μmol / ml, and DC is 918,543 ± 31,097 μmol / 10^{12rbc}, in a moderate form the MDA is 140,188 ± 3,639 μmol / ml, and DC 1165,32 ± 31,95 μmol / 10^{12rbc}, while in a severe form the MDA is 231,966 ± 18,495 μmol / ml while DCis 1557,272 ± 61,252 μmol / 10^{12rbc} (table 4).

Thus, the obtained results indicate that LPO is one of the leading links in the pathogenesis of DTG development. At the same time peroxidation syndromeis developing, which promotes destructive changes in the biological membrane cells of both a mother and a fetus, the violation of the biosynthesis of nucleic acids, protein, changes in the structure and function of many enzymes, which is a negative prediction for the subsequent occurrence of the postpartum period and the period of a newborn's birth.

Table 3

The state of the system of lipid peroxidation - antioxidant defense system in the blood of a newborn's umbilical cord in mothers with diffuse toxic goiter, M ± m

Examined groups		Contents			Activity	
		MDA_{pl}, μmol / l	MDA_{rbc}, μmol / ml	DC_{rbc}, μmol /10^{12er}	SOD_{pl}, units per mg of protein	GPO_{pl}, μmol NADFN / min 1 g protein
Control group, n=30		5,691±0,148	0,749±0,013	6,036±0,161	0,602±0,019	2,726±0,079
Degree of severity of the diffuse toxic goiter	mild form, n=65	6,571±0,150 p_k<0,05	1,102±0,054 p_k<0,05	7,447±0,204 p_k<0,05	0,489±0,021 p_k<0,05	2,239±0,085 p_k<0,05
	moderate form, n=64	8,046±0,230 p_k<0,05 p_l<0,05	1,441±0,063 p_k<0,05 p_l<0,05	8,959±0,285 p_k<0,05 p_l<0,05	0,343±0,037 p_k<0,05 p_l<0,05	1,853±0,068 p_k<0,05 p_l<0,05
	severe form, n=9	11,614±0,71 p_k<0,05 p_l<0,05 p_m<0,05	2,197±0,14 p_k<0,05 p_l<0,05 p_m<0,05	13,419±0,888 p_k<0,05 p_l<0,05 p_m<0,05	0,101±0,005 p_k<0,05 p_l<0,05 p_m<0,05	0,658±0,069 p_k<0,05 p_l<0,05 p_m<0,05

Notes: p_k - probability of differences of the corresponding indicators relative to the control group of pregnant women;

p_l - probability of differences of the corresponding indicators relative to the group of pregnant women with a mild form of diffuse toxic goiter;

p_c - the probability of differences of the corresponding indicators relative to the group of pregnant women with a moderate form diffuse toxic goiter.

Thus, the complex of conducted studies shows that the intensity of the LPO can serve as a test for determining the severity of DTG and is used for the diagnosis of thyrotoxicosis, the prognosis of the course of the childbirth, postpartum and the period of a newborn's birth, for the application of adequate tactics and therapy in this pathology of pregnancy.

The investigation of enzymes of antioxidant defense system at DTG has shown that superoxide dismutase (SOD) activity in plasma is depleted in accordance with the severity of DTG, and especially during the childbirth, and in the severe form of SOD is 0,121 ± 0,019 units/ mg of protein, in the moderate form of SOD – 0,234 ± 0,023 units / mg of protein, in a mild form of SOD – 0,463 ± 0,009 units / mg of protein (table 1).

In the study of the venous cord blood of a fetus, a significant decrease in the plasma enzyme was detected in accordance with the severity of the pathological process. In a severe form of DTG SOD is 0,101 ± 0,005 units / mg of protein, in a moderate form SOD is 0,343 ± 0,037, while in the mild form SOD is 0,489 ± 0,021 ($p<0,05$). These data suggest the intensification of the pathological process in the mother-placenta-fetus system and the correction of adaptive processes is carried out at the expense of the antioxidant system of a fetus in the progressive pathology of the placental system (table 3).

Similar data were obtained in the study of glutathione peroxidase (GPO) activity, the content of which in the blood plasma of pregnant women is depleted according to the severity of the process, which is due to the increased hemolysis in erythrocytes when the patient's condition deteriorates. Thus, in a mild form of DTG GPO in the blood plasma makes up 3,973 ± 0,079 μmol of NADF / min 1 g of protein, in a

moderate form it is 2,412 ± 0,1136 μmol of NADF / min 1 g of protein, in a severe form 1,579 ± 0,134 μmol of NADF / min 1 g protein (table 1).

Table 4

The state of the system of the lipid peroxidation - antioxidant defense system in the placenta during physiological pregnancy and in case of diffuse toxic goiter, M ± m

Examined groups		Contents		Activity	
		MDA_{pl}, μmol / l	MDA_{rbc}, μ / ml	DC_{rbc}, μmol /10^{12er}	GPO_{pl}, μmol NADFN / min 1 g protein
Control group, n=30		79,328±3,527	681,625±33,828	210,567±10,123	789,270±31,373
Degree of severity of the diffuse toxic goiter	mild form, n=65	114,070±4,544 p_k<0,05	918,543±31,097 p_k<0,05	179,755±2,138 p_k<0,05	704,098±13,448 p_k<0,05
	moderate form, n=64	140,188±3,639 p_k<0,05 p_l<0,05	1165,32±31,95 p_k<0,05 p_l<0,05	168,095±2,765 p_k<0,05 p_l<0,05	635,853±16,405 p_k<0,05 p_l<0,05
	severe form, n=9	231,966±18,495 p_k<0,05 p_l<0,05 p_m<0,05	1557,272±61,251 p_k<0,05 p_l<0,05 p_m<0,05	104,449±1,640 p_k<0,05 p_l<0,05 p_m<0,05	372,408±19,066 p_k<0,05 p_l<0,05 p_m<0,05

Notes:

p_k - probability of differences of the corresponding indicators relative to the control group of pregnant women;

p_l - probability of differences of the corresponding indicators relative to the group of pregnant women with a mild form of diffuse toxic goiter;

p_m - the probability of differences of the corresponding indicators relative to the group of pregnant women with a moderate form diffuse toxic goiter.

Changes in the enzymes of the selenium-dependent glutathione anti-oxidant system in the venous blood of the umbilical cord have a characteristic dependence that is suppressed by the severity of the DTG course: in a severe form of DTG the LPO in the venous blood of the umbilical cord is 0,658 ± 0,069, in a moderate form it is 1,853 ± 0,068, and in a mild form - 2,239 ± 0,085 microns per mole of NADF / min 1 g of protein (table 3).

Changes in superoxide dismutase and glutathione peroxidase are also noted in the placental tissue. Thus, SOD in the placenta in a severe form of DTG is 104,449 ± 1,64 units / mg protein; in a moderate it is 168,095 ± 2,765, in a mild form it makes up 179,755 ± 2,138 units/ mg of protein (table 4).

The LPO in the placenta in a severe form is 372,408 ± 19,066; in a moderate form it is 635,853 ± 16,405; in a mild form - 704,098 ± 13,448 micron NADF / min 1 g protein (table 4).

Thus, the presented results of researches indicate that the state of patients with DTG corresponds to the peculiarities of the increasing changes of free radical processes and the depletion of the antioxidant defense system. [11]

It should be emphasized that free radical processes continue to grow rapidly in accordance with the severity of the course of the pathological process. There is the suppression of the intensification of anti-peroxide enzymes, which is probably due to the overload of their substrates (peroxides, hydroperoxides, cycloperexides).[7, 11]

The object of the action of oxygen-active compounds in the conditions of reducing the buffer capacity of the antioxidant system of defence of the body of a pregnant woman are proteins, nucleic acids, substrates of lipid nature, the intensive oxidation of which leads to their modification, and as a result - to the violation of the biological activity of the synthesis and transport of enzymes, hormones, vitamins, changes in receptor functions of membrane permeability, energy deficiency, the violation of tissue respiration. Such violences lead to radical changes in the biological function of the tissues of the body as a whole. [4]

The activation of the LPO during the physiological pregnancy is thought to be due to the increase in the need for oxygen, which does not lead to irreversible damage, because it is ensured by the increase in the antioxidant defense system (AODS) which partially neutralizes the links of LPO, preventing the formation of MDA, the final metabolite of free radical lipid oxidation. The physiological pregnancy is accompanied by stable persistent oxidative stress, which can be explained by the parallel increase in the activity of tissue antioxidant enzymes that have an adaptive nature and are the main factor in stabilizing oxidative stress in such pregnant women. [7]

In the course of the physiological course of pregnancy, the increase of AODS intensification is determined, however, it does not exceed 5-10 % of the level in non-pregnant women, which is the result of

the compensation of the overall increase in metabolism and the physiological response to the intensification of LPO. As the progression of pregnancy has been observed, we have noted further increase of all investigated AODS indicators. [11]

The indicated changes, in turn, cause the violation of the system of homeostasis, vascular reactivity, microcirculation, cardiac activity. Further on, these changes, combined with the tissue and cell hypoxia, lead to profound changes in the organs and systems of life support for both a mother and a fetus.

The obtained metabolic disorders are characterized by the accumulation in the body of undocociated products such as ketones, aldehydes, semi-solids, free radicals, peroxide leads to the development of metabolic acidosis, which contributes to the decrease in the buffer capacity of AODS in pregnant women, which can lead to the development of severe encephalopathies in diffuse toxic goiters. [1]

The development of metabolic disoders in severe forms of thyrotoxicosis is characterized by the pathological activation of LPO in the context of the decrease in the antioxidant activity, which significantly affects the degree of degradation of protein molecules, and the free radicals thus occur, violate the permeability of the biomembrane cells, reduce the synthesis of endogenous phospholipids, increase the viscosity of the lipid bilayerof cells.[12]

Paying attention to the biological significance of the dynamic equilibrium of these processes in the life of the cells, one can not ignore this mechanism, in examining the causes of the development of obstetric and perinatal pathology, which are so typical for thyropathies.

Conclusion

Thus, based on the data obtained, we can state that one of the leading causes of thyrotoxicosis is the lack of antioxidant defense of the body, which plays a leading role in its adaptation during pregnancy, childbirth and in the postpartum period.

The indicator of LPO and oxidative stress may be criteria for the severity of thyrotoxicosis, as well as a marker for predicting the course of pregnancy, both for a mother and a fetus in women with diffuse toxic goiter. The study of AODS and its resistance to toxic LPO products allow the development of adequate programs for the treatment of hyperthyroidism and the prevention of fetoplacental complications in pregnant women with diffuse toxic goiter.

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Реферати

ЗМІНИ ПОКАЗНИКІВ ПЕРОКСИДАЦІЇ ЛІПІДІВ ТА АНТИОКСИДАНТНОЇ АКТИВНОСТІ У ВАГІТНИХ ТА РОДІЛЬ ІЗ ДИФУЗНИМ ТОКСИЧНИМ ЗОБОМ

Паєнок О.С., Паєнок А.В., Паньків І.В., Костів М.О.

З метою встановлення залежності активності пероксидації ліпідів від ступеня важкості тиреотоксикозу, а також впливу його на порушення антиоксидантного захисту в системі мати-плацента-плід проведено

ИЗМЕНЕНИЯ ПОКАЗАТЕЛЕЙ ПЕРОКСИДАЦИИ ЛИПИДОВ И АНТИОКСИДАНТНОЙ АКТИВНОСТИ У БЕРЕМЕННЫХ И РОЖЕНИЦ С ДИФФУЗНЫМ ТОКСИЧЕСКИМ ЗОБОМ

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С целью установления зависимости активности ПОЛ от степени тяжести тиреотоксикоза, а также влияния его на нарушение антиоксидантной защиты в системе мать-плацента-плод проведено обследование 138

обстеження 138 вагітних жінок із дифузним токсичним зобом, із яких 65 пацієнток мали легкий ступінь дифузного токсичного зобу, 64 – середній, 9 – важкий. Контрольну групу склали 30 жінок із фізіологічним перебігом вагітності. Обстеження проводилися в третьому триместрі вагітності, а також та під час пологів. Визначали концентрацію початкових та кінцевих продуктів вільнорадикального окислення та ферментів антиоксидантної системи захисту. Отримані результати вказують, що однією з провідних причин розвитку тиреотоксикозу є недостатність антиоксидантного захисту організму, показники якого можуть слугувати критеріями важкості перебігу захворювання та застосовуватися для моніторингу виникнення перинатальних ускладнень при дифузному токсичному зобі у вагітних.

Ключові слова: вагітність, пологи, перекисне окислення ліпідів, антиоксидантна активність, дифузний токсичний зоб.

Стаття надійшла 26.10.18 р.

беременных женщин с диффузным токсическим зобом, из которых 65 пациенток имели легкую степень диффузного токсического зоба, 64 - среднюю, 9 - тяжелую. Контрольную группу составили 30 женщин с физиологическим течением беременности. Обследования проводились в третьем триместре беременности, а также и во время родов. Определяли концентрацию начальных и конечных продуктов свободнорадикального окисления и ферментов антиоксидантной системы защиты. Полученные результаты указывают, что одной из ведущих причин развития тиреотоксикоза является недостаточность антиоксидантной защиты организма, показатели которой могут служить критериями тяжести течения заболевания и применяться для мониторинга возникновения перинатальных осложнений при диффузном токсическом зобе у беременных.

Ключевые слова: беременность, роды, перекисное окисление липидов, антиоксидантная активность, диффузный токсический зоб.

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DOI 10.26724/2079-8334-2019-2-68-91-96
УДК 614.2:616-082.3

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РЕЗУЛЬТАТИ АУДИТУ ДОТРИМАННЯ УНІФІКОВАНОГО КЛІНІЧНОГО ПРОТОКОЛУ НАДАННЯ МЕДИЧНОЇ ДОПОМОГИ ПАЦІЄНТАМ З ІШЕМІЧНИМ ІНСУЛЬТОМ У ГОСТРОМУ ПЕРІОДІ

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Метою роботи було провести аудит відповідності надання спеціалізованої медичної допомоги в стаціонарних умовах пацієнтам з ішемічним інсультом у гострому періоді положенням галузевого клінічного протоколу на прикладі закладів охорони здоров'я Житомирської області. Дослідження проводилося шляхом суцільної вибірки та ретроспективного аналізу медичних карт стаціонарних хворих з діагнозом «Ішемічний інсульт», які отримували спеціалізовану медичну допомогу у 26 закладах охорони здоров'я Житомирської області у першому півріччі 2018 року. За спеціально розробленою «Картою аудиту», яка включала 21 індикатор за 4 розділами, було здійснено аналіз 508 випадків лікування. Уніфікований клінічний протокол надання медичної допомоги при ішемічному інсульті (протокол) в частині діагностики та обстеження за 5 критеріями був повністю дотриманий у 25,0±1,9% випадків, в частині призначення лікарських засобів за 11 індикаторами - при лікуванні лише 7,9±1,2% пацієнтів. Рання мобілізація в гострому періоді ішемічного інсульту проводилася в 59,8±2,2% випадків, індивідуальний план реабілітації наявний в 54,7±2,2% випадків лікування. Заходи з профілактики повторного інсульту відповідали протоколу у 59,8±2,2% випадків. За результатами оцінки 21 індикатора у 2018 році повне дотримання протоколу встановлено при лікуванні лише 15 пацієнтів (3,0±0,8% випадків), хоча за окремими критеріями в частині обстеження і лікування порівняно з даними 2014 року відмічена достовірно позитивна динаміка. Встановлено низький рівень стандартизації медичної допомоги при ішемічному інсульті, що зумовлено недостатньою верифікацією діагнозу, призначенням лікарських засобів з недоведеною ефективністю, відсутністю сучасних підходів до реабілітації пацієнтів та профілактики повторних інсультів.

Ключові слова: аудит, ішемічний інсульт, протокол, індикатор, медична допомога.

Дане дослідження є фрагментом НДР «Особливості перебігу та наслідки інсульту у хворих різних вікових груп з урахуванням генетичних та інфекційних чинників і коморбідної патології (номер державної реєстрації 0118U003695).

Проблема цереброваскулярних захворювань є однією із найбільш актуальних у сучасній медицині, зокрема для системи охорони здоров'я України, де основною причиною смертності є хвороби системи кровообігу. Серед них особливо небезпечним є ішемічний інсульт (ІІ) [3,5]. Захворюваність на ІІ становить 270—280 випадків на 100 тисяч населення і перевищує середній показник у країнах Євросоюзу (200 на 100 тисяч населення). В Україні щороку реєструють майже 100 тис. випадків первинного ІІ, від нього помирають 10–12% пацієнтів, близько 60% стають інвалідами [1,2,6]. За даними Інституту по вимірюванню показників здоров'я та оцінці стану здоров'я (IHME), в Україні інсульти є другою (після ішемічної хвороби серця) причиною передчасної смертності й інвалідності. У загальній структурі глобального тягаря хвороб у нашій державі у 2017 році частка інсультів становила понад 8% [8].