

періоді може ускладнитися несостоятельностью швов. Для создания соответствия диаметров приводного и отводящего сегментов кишки использовали "криоадаптацию" отделов кишки, на которых предполагалось наложение анастомоза. С помощью криоадаптации нами восстановлена непрерывность кишечника у 18 больных. Несостоятельности анастомоза или явлений анастомозита не отмечено. Кроме того, активное сокращение приводящей петли под влиянием холода является своеобразным тестом на восстановление моторики растянутой кишки. Использование «криоадаптации» позволяет значительно уменьшить количество больных с колостомами, является социально значимой, а не дорогостоящей операцией и простой в использовании.

Ключевые слова: кишечная непроходимость, адаптивный анастомоз, криоадаптация.

Стаття надійшла 29.06.18 р.

operations in 12, colostomy after tumor resection imposed in 6.

With the help of cold adaptation, we restored the intestinal continuity in 18 patients. We did not observe the anastomosis or the anastomosis phenomena. In addition, the active reduction of the driving loop under the influence of cold is a peculiar test for the restoration of the motility of the stomach ulcer. An unsuccessful attempt to reduce the diameter was noted in 2 patients, who were imposed single-stranded colostomy. The reasons that the intestine did not react to the cold, we are not known. Perhaps this is due to decompensation of mechanisms of rapid contractile ability of the intestine.

Keywords: intestinal obstruction, adaptive anastomosis, cryoadaptation.

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DOI 10.26724/2079-8334-2019-2-68-82-85
UDC 618.2/7-06:616.391.04:577.164.1]-084

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PREVENTION OF OBSTETRIC COMPLICATIONS IN WOMEN WITH B VITAMIN DEFICIENCY

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Findings of the studies made in the group of women of reproductive age with B vitamin deficiency, who received comprehensive preventive maintenance and treatment of gestational complications supplemented with vitamin therapy have been presented. The data of comparative characteristics of clinical and laboratory observations with a group of women who received conventional therapy have been elucidated. The efficiency of application of the suggested etiopathogenetic approach aimed at prevention maintenance and comprehensive therapy of gestational complications have been grounded.

Keywords: gestational complications, vitamins, prophylaxis.

The work is a fragment of the research project "The role of chronic infection of the uterus and lower parts of the genital tract in the formation of obstetrical and gynecological pathologies", state registration No. 0117U005276.

B vitamins are essential parts of enzymes and coenzymes of the tricarboxylic acids cycle [1]. Deficiencies of the most of vitamins have been found in the female population of Odessa region, namely, ascorbic acid in 40-100% of people, B vitamins in 20-100% of women (including, thiamine, pyridoxine – up to 60%, B₁₂ vitamin – up to 15% of the population). In 70-80% of women a combined deficiency of three and more vitamins, i.e., polyvitamin conditions regardless of age, season, place of residence, is observed [5].

Under such conditions a woman's body contains only a minimal amount of vitamins that prevent the development of severe forms of vitamin deficiency, though insufficient for provision of complete vital metabolic processes and functioning of the reproductive system. B vitamins are involved in all processes of metabolism and are interconnected by its action [3]. A deficiency of vitamins of this group is a hallmark of the onset of such diseases as menstrual cycle dysfunction, uterine leiomyoma, anemia [4].

A subclinical deficit of vitamins B₁, B₆, B₁₂ is the major cause among the variety of the direct causes of reproductive health disorder and complicated course of pregnancy, which is one of the reasons for the occurrence of vaginal dysbiosis [2], endothelial dysfunction, dysmetabolic impairments in the woman's body and fetoplacental complex, as well as the chain of pathogenetic range of the vast majority of obstetric-gynecological and perinatal complications. A deficiency of vitamins during pregnancy adversely affects the formation of an embryo, embryo and fetal development, increases the risk for perinatal pathology, infant mortality and is one of the causes of birth defects [3, 5].

The purpose of the study was improving the efficiency of the comprehensive prevention of obstetric-gynecological and perinatal complications by applying the complex vitamin supplements.

Material and methods. 90 women of reproductive age have been examined before pregnancy and according to the trimesters of gestation:

- 30 almost healthy women with physiological course of pregnancy who gave birth to healthy babies (control Group A);
- 30 women with complicated obstetric gynecological past history and subclinical deficit of B₁, B₆, B₁₂ vitamins who refused to consume the vitamins both during the preconceptive stage and pregnancy (Group B);

- 30 pregnant women (Group C), who consume the complex supplement containing cobamide (coenzyme B₁₂), cocarboxylase (coenzyme B₁), pyridoxal 5-phosphate (coenzyme B₆), carnitine, lysine to prevent the obstetric and perinatal complication. The supplement was prescribed to women from Group C at the preconceptive stage and during pregnancy in the II and III trimesters, in case if no allergies to B vitamins exists, 1 capsule 3 times a day during 20-21 days.

Results of the study and their discussion. The concomitant factors of the development of reproductive disorders, the risk for obstetric and perinatal complications in women with subclinical vitamin deficiency have been found, namely, winter-spring period of conception (49.5%), hormone disruptions (37.4%), extragenital pathology (71%), burdened gynecological past history of inflammatory processes (42%), uterine leiomyoma (83.2%), artificial (77.8%) and spontaneous (73.3%) termination of pregnancy in the past history, the excessive use of medications (69.7%), complicated course of previous pregnancies (79.6%) and childbirth (45.2%).

Vitamin B₁ deficiency is one of the reasons for the development of fetal hypotrophy, encephalopathy, enzymopathy. Thiamine is a direct precursor of cocarboxylase (thiamine phosphate) that is a cofactor of dehydrogenase, the components of nucleic acids, nucleotides, fatty acids and acetylcholine. Vitamin B₁ is actively transported through the placenta and rapidly turns into cocarboxylase in the body of the fetus.

In the control Group A the amount of vitamin B₁ was within the referential values and remained without changes during the entire pregnancy, but was tending to decline according to trimesters of gestation.

In Group B the level of vitamin B₁ before pregnancy was at the level of the lower bound of the norm. In the first trimester of pregnancy it was 8,2 times significantly lower ($p < 0.01$) as compared to Group A; by 9.7 times lower in the second trimester and by 8.0 lower in third trimester.

In Group C the conducted preconceptive preparation showed that the amount of B₁ vitamin was within the referential values. In the I, II and III trimesters of gestation its level was by 1.3, 1.4 and 1.4 times, respectively, lower than in controls ($p < 0.05$). However, despite a slight decrease in its level, in comparison with the control group A, it was within the referential values.

B₆ vitamin (pyridoxine) has neuroprotective and antioxidant properties, is involved in fat and nitrogenous metabolism, the synthesis of serotonin and gamma-aminobutyric acid (CNS inhibitory factor), converting of tryptophane into serotonin and nicotinic acid; it is the component of transaminase and decarboxylase in the form of coenzymes. Pyridoxine deficiency leads to disruption of processes of estrogen inactivation in the liver.

In the control Group A the amount of vitamin B₆ was within the physiological norm, and remained the same during the entire pregnancy, but significantly declined along the trimesters of gestation.

In Group B the level of B₆ vitamin before pregnancy indicated about the presence of subclinical deficiency ($14,2 \pm 1,3$ nmol/l). In the first trimester its level was by 4.7 times significantly lower ($p < 0.01$) as compared to Group A; 4,8 times lower in the second trimester and 3,6 lower in the third trimester that was estimated as subclinical deficiency of B₆ vitamin during pregnancy.

In Group C, judging by the normal physiological indices, the level of B₆ vitamin was by 1.8; 2.1; 1.9 times lower than in controls ($p < 0.05$) in the I, II and III trimesters of gestation, respectively. However, considering the referential values its level was within the physiological norm.

B₁₂ vitamin belongs to group of Co-containing corrinoids that play a major role in the transmethylation. The vitamin ensures synthesis of lipoproteins in the myelinic tissue, is contained in reductases, which convert the folic acid into tetrafolate one; participates in the synthesis of proteins, enzymes, succinic acid, methylated compounds, in the process of erythropoiesis, stimulates the formation of methionine and choline. The deficit of cyanocobalamin reduces the synthesis of nucleic acids, leads to the development of megaloblastic-type anemia, fatty infiltration of the liver, uterine leiomyoma, embryopathy, placental dysfunction, slow fetal growth, premature birth.

The normal physiological amount of blood cyanocobalamin constitutes 140-914 pg/ml. Consequently, the concentration of B₁₂ vitamin in pregnant women of control Group A before pregnancy and during gestation was within the referential values, tending to decrease.

In Group B the level of vitamin B₁₂ before pregnancy was lower than the norm (state of subclinical deficiency). In the first trimester its level decreased to $133,2 \pm 5,3$ pg/ml. Up to the third trimester the dramatic decline ($p < 0.05$) of cyanocobalamin, as compared to the control group (by 1.3 times lower on the average) and the initial level (by 1.2 times) has been noted.

In Group C the conducted preconceptive preparation showed that the amount of B₁₂ vitamin before fertilization was $204,2 \pm 10,2$ pg/ml. The dynamics of pregnancy progression showed a clear tendency to decrease in its amount; however, the introduction of suggested supplement into comprehensive prophylaxis of obstetric-gynecological and perinatal complications maintained its amount at the level of the physiological norm.

The resulting preconceptive preparation and use of complex supplement during pregnancy contribute to decrease in the frequency of obstetric and perinatal complications due to stabilization of metabolic processes.

In Group C the conducted activities on the prevention of obstetric and perinatal complications in pregnant women with a deficiency of B₁, B₆, B₁₂ vitamins showed that clinical signs of gestational anemia and pyelonephritis were 2,1 times lower than during the conventional therapy. The threat of termination of pregnancy and partial separation of the chorion in the first trimester has been diagnosed in 26.7% of women of the Group B and 3.3% of women from Group C (by 8.1 times lower).

In Group B the threat of premature birth and miscarriage accounted for 63.3% and 46.7% of observations, respectively. In Group C the threat of premature birth has been observed in 16.7% (3.8 times lower than in Group B), and childbirth in all pregnant women of Group C occurred in time.

Placental hypotrophy (30.0%), oligohydramnios (26.7%), syndrome of delayed fetal growth (36.7%), chronic fetal distress (56.7%) and the acute fetal distress (16.7%) have been observed in Group B during the second and third trimesters of pregnancy.

Significantly fewer complications, namely, placental hypotrophy (20.0%; by 1.5 times lower), oligohydramnios (13.3%), syndrome of delayed fetal growth (10.0%; by 3.7 times lower), chronic fetal distress (10.0%; by 5.7 times lower) and no signs of the acute fetal distress has been found in Group C, as compared to Group B, in the third trimester.

In Group B premature separation of the placenta has been diagnosed in 13.3% of pregnant women; abnormal uterine contractions accounted for 66.7%; premature amniotic fluid rupture was observed in 80.0%. In Group C no premature separation of the placenta has been diagnosed, and abnormal uterine contractions and premature amniotic fluid rupture has been observed in 6.7% and 16.7% of cases, respectively, that was 10.0 and by 4.8 times lower than in Group B.

In Group B subinvolution of uterus as the complication occurred in the postpartum period accounted for 23,3% of cases, whereas in Group C no postpartum complications have been diagnosed.

Subclinical deficiency of B vitamins causes the development of reproductive disorders, increases the risk of obstetric and perinatal complications. The main factors contributing to such a deficit were identified: winter and spring fertilization (49.5%), extragenital pathology (71%), uterine leiomyoma (83.2%), artificial (77.8%) and self-willed (73.3%) history of abortion, excessive use of drugs (69.7%), etc.

Since vitamin B₁ (thiamine) is a direct precursor of cocarboxylase and is actively transported through the placenta into the body of the fetus, which quickly turns into cocarboxylase, its deficiency is one of the causes of fetal hypotrophy, encephalopathy, enzymopathy.

Vitamin B₆ (pyridoxine) is involved in fat and nitrogen metabolism, so its lack leads to disorders of estrogen inactivation processes in the pregnant woman's liver, which promotes the development of obstetric and perinatal complications.

Vitamin B₁₂ deficiency (cyanocobalamin) contributes to a reduction in the synthesis of nucleic acids, leads to the development of anemia of the megaloblastic type, fatty liver infiltration, uterine leiomyoma, embryopathy, placenta dysfunction, fetal development delay, preterm labor.

Preconceptional preparation aimed at compensating group B hypovitaminosis with the use of a combined preparation (which includes coenzymes of vitamins B₁, B₆, B₁₂, as well as carnitine and lysine), permitted to reduce the frequency of perinatal complications as a result of metabolic processes stabilization.

Conclusions

1. The use of complex supplement containing cobamide (coenzyme B₁₂), cocarboxylase (coenzyme B₁), pyridoxal 5-phosphate (coenzyme B₆), carnitine and lysine in the comprehensive prophylaxis of obstetric and perinatal complications in pregnant women with B₁, B₆, B₁₂ vitamins deficiency is etiopathogenetically grounded and should be applied both at the preconceptive stage and during the II and III trimesters of pregnancy.

2. Timely preventive measures and individual approach to the original state of woman's health, etiological factors of vitamin deficiency and specific reproductive complications are of particular importance.

Prospects for further research are to study subclinical deficiency of vitamin D in pregnant women.

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Реферати

**ПРОФИЛАКТИКА АКУШЕРСКИХ
УСКЛАДНЕНЬ У ЖІНОК З
ГИПОВИТАМИНОЗОМ ГРУППИ В**

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Голубенко М.Ю.,²Добровольська Л.М.**

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 этиопатогенетического подхода с целью профилактики и комплексной 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