

Features of the Study of the Clinical and Epidemiological Status and Ways of Preventing Iron Deficiency in Pregnant Women

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Abstract One in three women of childbearing age suffer from iron deficiency anemia, and this "negative growth" becomes more acute depending on the length of gestation, especially in the II and III trimesters. It is recommended to emphasize vigilance and attention to iron deficiency anemia in these periods.

Keywords Iron deficiency, Preventive guidelines, Pharmacocontrol

It is mentioned in a number of studies that therapists and general practitioners face the problem of iron deficiency anemia (IDA), not obstetrician-gynecologist and hematologist. Therefore, their tasks include the creation of early detection, treatment and diagnostic programs of IDA in accordance with existing standards, and the justification and implementation of preventive programs taking into account the risk factors of patients [1-3].

Most recommendations indicate that the diagnosis of the disease by clinical manifestations and peripheral blood imaging is sufficient for the therapist [4-8].

Trukhan D.I. According to the results of the researches of et al., a group of symptoms of the diseases that lead to it, "ie" causing IDA, are also observed - bleeding, gynecological diseases, gastrointestinal diseases, chronic hepatitis, cirrhosis of the liver, and alcoholism [9-10].

If there is no age, IDA in pregnant women is characterized by the fact that it passes without specific clinical manifestations for a long time, it is detected accidentally during preventive examinations, for example, when referring to treatment institutions with unstable angina, respiratory failure, heart failure, and other atherosclerotic diseases [7,11,12].

The clinical manifestations of IDA in pregnant women are mainly manifested by the following, or in most studies and manuals, it is recommended to take them into account (in scientific work, in daily practice, in the planning of prevention and treatment programs): anemia syndrome (quick fatigue, pallor of the skin and mucous membranes,

headache, circulation, hypothermic conditions, Hg and erythrocytes and color indicators are abnormally reduced), circulatory - hypoxic syndrome (hypositis, dysphagia, sub- and atrophic gastritis, flatulence, constipation, diarrhea, panting, tachycardia, anginal pains, muffled heart tone and presence of systolic noise in the area of the heart impulse, decrease in the T wave on the EKG; memory loss and difficulty concentrating, muscle weakness, urinary incontinence despite the normal urine analysis), sideropenic syndrome (stomach - by the intestinal system, skin - with changes in mucous membranes and nails) and secondary immunodeficiency syndrome (expressed by increased susceptibility to infectious-inflammatory diseases, accelerated recurrences) [12-13].

As etiological causes and risk factors of IDA in pregnant women, various researchers confirm the following or note their exacerbation due to anemia: Breymann C. et al (2016) and Froessel B. et al. According to (2014), changes in the gastrointestinal system [10,14].

According to Derzsiova K. et al (2001) and Chrobak H. et al (2001) inappropriate quantification and selection of ferropreparations [15] Bozhinova S. et al. (2005) - gynecological diseases and Krochmalczyk K. D. et al. (2005) to have other comorbidities [14,15,16].

The following are confirmed by foreign researchers as the leading risk factors in the population of pregnant women with IDA, that is, with their search and detection as a leading task: chronic blood loss of various locations (excessive menstruation, dysfunctional uterine bleeding), gastrointestinal bleeding (reflux - esophagitis, erosive-ulcer diseases of the stomach, Crohn's disease, ulcerative colitis, helminthosis,

diverticulitis, hemorrhagic cystitis), nosebleeds, bleeding due to kidney diseases (glomerulonephritis, urolithiasis, tumors), bleeding gums, endometriosis and bleeding in pulmonary hemosiderosis, increased need for iron, alimentary deficiency (insufficient intake of iron with food), iron absorption disorders (in enteritis, malabsorption syndrome, after resection of digestive organs, taking drugs that have a negative effect on iron absorption and iron transport disorders) [15,17].

In the case of modern obstetrics and gynecology, for example, TTK, transition to a completely new model of the organization of medicine, in our opinion, there is an urge and an urgent need. This process has been started in other specialties and significant results have been achieved. For example, in the last ten years, the rate of cardiovascular risk from arterial hypertension has decreased by 45% as a result of using this model of medicine [10,16].

This direction is "4P" medicine, which proposes 4 main principles: PREDICT, PREVENT, PERSONALIZE and PARTICIPATE [18].

Its main goal is to identify the disease before its clinical manifestation, to develop comprehensive preventive measures and appropriate use of treatment tools. Modern medicine/obstetrics and gynecology, in its traditional sense, works with the manifestations of the disease (primary or chronic diseases), while "4P" medicine focuses on risk factors and causes of diseases.

Бир қатар та aimed at determining the problem, developing methods for their elimination.

In order to introduce "4P" medicine in obstetrics and gynecology, first of all, it is necessary to increase epidemiological studies on a large scale [18,17].

According to WHO data, 3 groups of population are recognized as the most vulnerable population to anemia: preschool children (0-5 years old), pregnant women, women of childbearing age (15-50 years old) [19].

Stuklov N. I. et al., Konovodova E. N. b.q. and Napalkov D. A. and b. Q. (2012) analyzed the epidemiological situation of anemia, iron deficiency and iron deficiency anemia in women in Russia.

In the Russian Federation, the problem of anemia among the population has intensified for several years and is expressed as follows: 1) 20 39.9 percent of the population is sick with anemia; 2) in children of preschool age - it is recorded with a frequency of 26.5%; 3) IDA in pregnant women is confirmed by the prevalence rate of 20.8%; 4) in women of childbearing age, the frequency of detection of this disease is 19.8 percent. In the conditions of Russia, the issue of reducing the global risk of disease and death from it has become extremely urgent in almost all groups of the population, and mainly in women of childbearing age, adolescents, children and pregnant women [15,20,21].

The panel of experts analyzed the epidemiological situation and the panel noted that the prevalence of prelatent and latent iron deficiency reached 32% in women. All women of childbearing age are iron deficient and are always at risk of developing iron deficiency anemia.

Accordingly, menarche - premature menstrual cycle always leads to blood loss and, in appropriate cases, loss of micronutrients, such as iron, and bulk ferrotherapy - prevention needs to be changed.

If the losses exceed the consumption capacity, iron deficiency is formed. Then, if iron metabolism is not balanced and the iron element is not replenished, iron deficiency anemia, especially in pregnant women, becomes more severe and develops [22-23].

Therefore, during pregnancy, during and after childbirth, it is necessary to continue planned active ferrotherapy - prevention together with microelements. For example, clinical-epidemiological, prophylactic and pharmacological issues become more relevant in pregnant women with iron deficiency.

In this process, epidemiological studies have a special place in identifying and solving IDA problems.

According to new data released by the World Health Organization, every third woman of childbearing age suffers from iron deficiency anemia [1,2].

T. N. The data reported by Bothwell (2000) are also noteworthy. The fact is that if we draw a conclusion from them, the need for iron increases up to 10 times in the second half of pregnancy. It cannot be replenished by alimentary means or by dietary nutrition of any food, and such "negative growth" becomes more acute depending on the period of gestation, especially in the II and III trimesters.

It is recommended to emphasize vigilance and care for iron deficiency anemia in these periods [2,11].

In WHO and MARS recommendations [3], Povord S. et al. (2020) and Ramsey M. et al. (2000) also cross-referenced the same issues and expressed a unanimous opinion: if iron preparations are not given to pregnant women at the stage of low levels of serum and ferritin before it is too late, the risk of developing clinical anemia increases dramatically [7,9].

Therefore, when carrying and monitoring pregnant clients, it is necessary to take into account the possibility of iron and folic acid deficiency, and the recommendation to consider the need to prescribe drugs for prevention is indicated in international guidelines/recommendations and researches carried out in recent years [10,12,24].

Milman N. T. et al (2020) published the results of their analysis of multiple European studies. They showed that 100 percent of women, during the gestation period, received less than the prescribed amount of iron with food (and in the case that they did not take iron supplements). This and other factors such as small intergenetic distance and continuous lactation have further increased the risk of IDA [1,12].

Another WHO report, contrary to the above report, reports that 40% of anemia in the world pregnant women suffer [24,12], and often the complication is a sharp deterioration in lifestyle, increased risk of surgical deliveries, premature births, preeclampsia, postpartum hemorrhage, postpartum hemorrhage [14,19].

A group of Russian researchers Karakhalis L. Yu., Andreeva M. D., Akhidat A. N. and Ignateva E. O. (2022) conducted a cohort, observational closed epidemiologic

study. Its purpose was to study the specific aspects of the treatment and treatment of IDA in pregnant women and evaluated 2253 pregnant women, 171 of them (7.6 percent) were diagnosed with anemia. Blood parameters were evaluated during the periods of pregnancy (6-12, 20 and 30 weeks). All women were treated with iron preparations for 4 weeks in the early stages of pregnancy. Important conclusions of the study: when anemia is detected in pregnant women, it is considered appropriate to use hepatoprotectors against the background of ferrotherapy. The use of such a complex approach improves the condition of pregnant women and leads to the accumulation of iron in liver cells. In the treatment of anemia, it is recommended to continue the use of iron preparations during all periods of pregnancy in order to prevent the occurrence of severe anemia during childbirth. The initial hemoglobin level of 125 g/l or less can be taken as a criterion for prelaminal 9 iron deficiency. The authors recommend determination of iron and ferritin levels during the registration (monitoring) of pregnant women [12,14].

The results confirming these scientific data were obtained by other researchers - I. I. Baranov and co-authors [15], A. N. Bogdanov and co-authors [12] and N. T. Also obtained by Vatutin and co-authors [15,20].

In modern international recommendations, hemoglobin ≥ 130 g/l is indicated as a standard indicator of hemoglobin in all pregnant women who are planned to undergo surgery, and below this there is a risk of bleeding. But in this regard, there are still controversial conclusions about limiting the maximum level of hemoglobin (< 110 g/l) in pregnant women and determining its appropriate norm [14,17].

Radiowski E. C., Johnson R. W. (2013) and Shao J., Hou J. et al. (2012) evidence that iron-dependent neurogenesis occurs in the III trimester and early neonatal period, maternal ferritin levels are therefore correlated with fetal levels [21].

Milmane N. et al (2011) confirmed, based on the monitoring of iron deficiency in fetuses and infants, that memory impairment, cognitive function and behavioral changes later develop as a consequence of the negative effects of IDA [22].

In the study of Ferguson M. T., Dennis A. T. (2019), it was noted that the synthesis of liver enzymes, especially transferrin, increases in iron deficiency. It performs a very important function, that is, this protein produced in the liver acts as a "transporter": it transports iron from intestinal epitheliocytes to erythroblast receptors, placental cells, and hepatocytes [1,22].

Antenatal anemia, Rukuni R. et al. (2016) research shows that it has a negative effect on the course of pregnancy, in particular, it often causes postpartum infections and bleeding [14].

Nair M. et al. (2016). Ali A. A. (2011) and Brabin B. J. et al. (2001) reported that severe anemia is a risk factor for maternal mortality, preeclampsia, and postpartum hemorrhage [22].

Anemia during pregnancy poses a risk because its clinical manifestations are more severe than in non-pregnant women.

For example, such a characteristic Ludwig H. et al. (2001) and Milman N. (2011) studies [21].

Anemia that develops during pregnancy can worsen the mother's condition to the point where she is unable to care for her baby. The disease is aggravated by severe lethargy, physical weakness, dizziness and cognitive impairment in a pregnant woman. Other researchers have also come to conclusions confirming this [17].

Clinical recommendations issued in recent years, results of studies of anemia related to maternal mortality, and analyzes of perinatal mortality indicate that anemia, mainly IDA, TT, and TTX, is a strong and variable risk factor in pregnant women. Postpartum hemorrhages associated with it are the leading cause of maternal death. Anemia is associated with an increased risk of perinatal death, miscarriage, and other complications.

The scientific sources of the last years unanimously agree that the attention of obstetricians-gynecologists to the problem of diagnosis and treatment of IDA and TT in the current period needs to be increased sharply, based on clinical recommendations in practice. Most researchers point to the clinical recommendations for "Iron-deficiency anemia" developed in Russia in 2021 as the perfect and most recent guide [25].

L. I. Idelson et al. (2005), A. I. Vorobev and others. (2009) and A. G. Rumyantseva, I. N. Zaharovalar's (2015) research also suggested improved practices or innovations in anemia detection and prevention.

In particular, another change introduced for the early detection and elimination of iron deficiency anemia is that it is sufficient to take into account the specific clinical and hematological presentation of the disease and laboratory evidence of absolute iron deficiency [17,22].

In the latest clinical recommendations, the terminology of IDA is interpreted as follows: it is an acquired disease, characterized by a decrease in the amount of iron in the blood serum, bone marrow and reserve tissues, and as a result, the production of hemoglobin and erythrocytes is disturbed, hypochromic anemia and tissue trophic disorders develop. Latent iron deficiency is a condition characterized by a sharp decrease in iron reserves in the body, while hemoglobin remains normal [17].

The frequency of detection of IDA is shown to be different in different studies and population groups, there are no clear data on this, researchers have given evidence conclusions in this regard [25].

According to the United Nation Child Organization (2011), IDA is one of the most common diseases in the world, and it is confirmed in the following distribution frequencies among different groups of the population - in developed and developing countries and globally: in children aged 0-4 years - 12%, 51% and 43%, 7%, 46% and 37% in children aged 5-12, 2%, 26% and 18% in men, 14%, 59% and 51% in pregnant women, 11%, 47% and 35% in women [15].

S. A. Volkova and others. (2008) in a study involving more than 8 thousand older people, IDA was detected in women with a frequency of 12-13%, and the highest frequency (up to

21-22%) was recorded at the age of 40-49. In men, IDA was confirmed with a detection frequency of 2.8% to 5.1%, relatively high prevalence rates (up to 21%) were observed in 60-69-year-olds.

Another important epidemiological conclusion was made by the expert council on "urgent issues of iron deficiency in the Russian Federation": the main reasons for the high frequency of iron deficiency in Russia are the alimentary factor and the low level of awareness of the population about this disease.

Camaschella C. (2019), WHO (2020), Guqulyak S. A. (2020) and Selguk V. Yu. and all. (2012) in the data presented by researchers such as IDA as the leading risk factors - heavy menstrual bleeding, pregnancy, repeated births, lactation, bleeding from the gastrointestinal system, blood loss in patients with chronic kidney failure on hemodialysis and donors, plant food, stomach or conditions after intestinal resection and intestinal inflammatory diseases leading to iron absorption disorders are distinguished.

The role of epidemiological factors in pregnant women with TT and IDA is of particular importance. Treatment (ferrotherapy) and prevention (ferroprophylaxis) measures are recommended to be planned and implemented directly based on them.

In particular, it is recommended that in primary and secondary prevention, for IDA and TT, follow-up or medical examinations or screening examinations should include:

- general analysis of blood (hemoglobin, hematocrit, MCV, MSN);
- serum indicators of iron metabolism;
- Every year for children aged 2-5 years; to carry out screening examinations in school-age children, adolescents and TYoA every 5-10 years (in the absence of risk factors) or once a year (in the presence of risk factors of IDA).

It can be seen from these that great progress has been made in studying the mechanisms of origin and formation of IDA and IDA as well as TT. This is recognized by most researchers.

However, epidemiological studies of TTX, IDA and TT in different regions and modern pregnant population have not been conducted sufficiently, and researches have been started in the direction of comparing and evaluating clinical data on IDA with epidemiological indicators in fetuses.

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