STATISTICS , TREATMENT AND PREVENTION MEASURES FOR IRON DEFICIENCY ANEMIA IN PREGNANT WOMEN

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Resume : Iron deficiency pathology in pregnant women is an urgent problem due to the significant impact on the process of pregnancy, the health of the pregnant woman and the newborn. Iron deficiency anemia (IDA) is considered one of the important indicators of the condition of pregnant women and is largely dependent on social status, often reflecting improper norational nutrition and high levels of poverty.

Keywords: Iron deficiency anemia , Hemoglobin, Hematocrit , Elemental (active) iron, Sideropenia .

Iron deficiency - is a condition of functional iron deficiency in tissues and deficiency of iron reserves without anemia or anemia. Iron deficiency is usually caused by a lack of iron in food, an increase in iron needs during periods of rapid growth (pregnancy and neonatal period) and/or large blood loss (gastrointestinal bleeding, polymenorrhoea, helminthoses, etc. In the first trimester of pregnancy, the need for iron substance increases by 800 mcg per day, and in the last trimester-by 7500 mcg per day. https://pubmed.ncbi.nlm.nih.gov/16691399/

There are three types of ID:

Level 1: prelature iron deficiency-reduction of iron reserves in the body.

Level 2: latent iron deficiency-the end of iron reserves in the depots, a decrease in iron content in tissue and blood serum, clinical signs of anemia are not observed, the level of ferritin decreases.

Level 3: manifest iron deficiency-decrease in hemoglobin level, development of IDA, manifestation of clinical signs. https://dx.doi.org/10.18565/therapy.2019.1.172-181

In different age groups, IDA is observed in 30% -45%, while sweet (latent) deficiency is observed in 60% of the population.

Epidemiology

Iron deficiency anemia (IDA) is one of the most common diseases in the world and ranks first in prevalence in women of fertile age. Worldwide, the frequency of anemia ranges from 25% to 50%, in developing countries — from 35% to 75%, and in developed countries-18% -20%. The prevalence of anemia, including IDA, is due to many reasons: socio-economic living conditions, nutrition, various bleeding, parasitic diseases, etc. It has been confirmed by WHO experts that anemia is more common in developing countries and that two groups of the population are the most susceptible of young children and pregnant women to suffer from anemia. https://remedium.ru/doctor/pediatrics/rasprostranennost-zhelezodefitsitnykh-sostoyaniy-i-faktory-na-nee-vliyayushchie/

Iron deficiency anemia (IDA) in clinical practice is most common in pregnant women. The prevalence of IDA in Uzbekistan is 60% among pregnant women and women of reproductive age, and 97-98% among dead mothers. In the last 12 years, the prevalence of IDA among women of reproductive age has decreased from 60% (1996) to 33.5% (2008). According to who, the prevalence of anemia is

mild at 5 to 20%, moderate at 20-39%, severe health problems at 40% and above. Currently, the problem of anemia in Uzbekistan is a secondary problem, causing pregnancy and childbirth pathology in 80% of women. Among somatic pathologies in pregnant women, IDA is in the first place.

Etiology

The main causes of IDA in women are severe menstrual bleeding, pregnancy, childbirth (especially often) and lactation.

Risk factors for the development of anemia include:

-severe living conditions: an unbalanced diet, insufficient intake of iron, protein, vitamins, folic acid and microelements into the body;

-chronic intoxication, including heavy metal salts (harmful production living in an ecologically heavy area);

-chronic diseases: rheumatism, diabetes mellitus, gastritis, kidney diseases, chronic foci of infection;

-anaemia in anaemnes;

-bleeding during pregnancy;

-so much pregnancy;

- how often to give birth with a long lactation period;

- the heavy pedigree;

-short intervals between midwives.

Etiological factors of IDA have been well studied and include socioeconomic, environmental, extragenital, infectious and inflammatory diseases, nutritive, various hemorrhages, short intergenetic interval, helminthic invasions, congenital iron deficiency, absorption disorders, increased iron needs, and nutritional properties . http://www.who.int/nutrition/publications/micronutrients.

Iron deficiency anemia in pregnant women is a decrease in the amount of hemoglobin and erythrocytes in the blood, as a result of which the property of oxygen delivery is impaired. Anemia often develops during pregnancy after a period of 20 weeks. Iron deficiency anemia in pregnant women is a primary anemia that precedes pregnancy, causes circulatory and tissue hypoxia, and is characterized by a deficiency of iron, as well as protein, vitamins and other important microelements.

Clinical picture

The main clinical manifestations of IDA include anemia (Table 3) and sideropenia syndromes.Sideropenia (from Greek “sideropenia”; “sidero” iron and “penia” deficiency) is a low iron content in blood plasma caused by iron deficiency in tissues, which leads to a decrease in the activity of many enzymes (cytochrome oxidase, peroxidase, succinate dehydrogenase, etc. https://dic.academic.ru/dic.nsf/medic/6557.

Symptoms of anemic syndrome

-holiness, headache, dizziness;

-inability to raise physical strain;

-decreased appetite;

-performance, attentiveness, decrease in the level of reading hours;

-skin coatings and mucous membranes be leaky;

-tachycardia, systolic noise.

Symptoms of sideropenic syndrome :

Skin, skin clots, mucous membrane: dry skin, sclera be bluish in color, hair loss and detachment, sinuous and flat nails, koylonychias (spoon-shaped nail), lines located in them transversely, tooth fracture, heilosis, oral cavity, throat, tongue mucosal atrophy, sideropenic glossitis, tongue ache.

Gastrointestinal tract and liver : appetite and taste disorders, squamous boil, nausea, esophagitis, sideropenic dysphagia (Plammer-Vinson or Paterson-Kelly syndrome), constipation or diarrhea, atrophic gastroduodenitis and enteritis, liver function disorders (protein binding function disorders, liver synapse changes).

Nervous system: tremor, weakness, attentiveness concentration disorder, memory impairment, decreased ability to function, noise in the ear, orthostatic hypotension, obscuration, fainting, odor and taste disorders (acetone, gasoline, etc. (patoosmia) to be impactful to pungent odors, and to want to eat mel, toothpaste, powder (pathophagia), anorexia, subfebrility.

Cardiovascular system: diastolic dysfunction, heart enlargement, dyspnoe (shortness of breath, disorders), hypotonia (in severe anemia), tumors.

Diagnostics

Diagnostic criteria of TTA:

- The amount of Hb is below 110 g / l;

-erythrocyte content below 3,5x1012/l;

-hematocrit below 33 ;

-serum ferritin concentration <30 mg / l;

-serum iron content <15 mkmol / l;

-IDA below 20% ,

-hypochromia, microcytosis, anizo - and poychylocytosis, reticulocytosis.

Weight level classification of anemia in pregnant women:

Hard level	Hemoglobin content (g / l)
1-mild	90-110
2-middle	70-89
3-hard	<70

The advice of a therapist, hematologist doctors is necessary: differential diagnostics, exclusion of diseases (oncological) that can cause IDA , optimization of treatment schemes.

In IDA, there is a decrease in serum iron and ferritin levels, as well as an increase in compensatory erythropoietin levels, which indicates that the body's iron reserves are decreasing. anemia of chronic diseases is recommended with decreased iron levels and increased ferritin levels without activation of erythropoietin development. https://pubmed.ncbi.nlm.nih.gov/37096333/

The effect of iron deficiency anemia on the course and outcome of pregnancy, newborn.

IDA can stand as a contributing factor for the development of severe preeclampsia of pregnancy and childbirth, premature migration of a normally located placenta , preterm labor, premature rupture of the ventricle, prolonged labor duration, fetoplatcentar insufficiency, uncertain fetal status, postpartum bleeding, postnatal infection, in some cases fatal complications. TTA and hypogalactia in the mother have a direct and long-term effect on the development of the nervous system of babies, and the low iron

content in the mother can be associated with an increased risk of autism, neurological disorders and abnormal brain structure disorders in babies. In addition, it is a risk factor for the development of asphyxia, cerebral hypoxic injury, underweight, anemia, immunodeficiency and sepsis in infants.

Screening for anemia during pregnancy

All pregnant women should be checked for hemoglobin levels once a month in the first and second trimesters of pregnancy; 2 times in the third trimester. Hb levels are below 110 g/l,erythrocyte levels are 3.5 × 10-12/l, hematocrit is less than 33%, ferritin <30 mg/l, serum iron <15 mkmol / l; IDA is diagnosed if ID cases is below 20%. Those diagnosed with iron deficiency anemia should take iron in addition to prenatal vitamins.

Have mild anemia examination of pregnant women.

Initial examination of pregnant women with mild anemia may include Anamnesis, physical examination and general analysis of enlarged blood, ferritin, serum iron, general iron binding property of whey and iron saturation of transferrin. Examination of peripheral blood smear can help identify hemolytic or parasitic disease. Depending on the individual and family Anamnesis and the amount of erythrocytes, a screening test for hemoglobinopathies can be performed through hemoglobin analysis and genetic testing.

Parenteral Iron use in pregnant patients

Both peroral and parenteral iron preparations are effective in replenishing iron reserves. In the treatment of iron deficiency anemia during pregnancy, parenteral iron was associated with an increase in hemoglobin levels in the mother and a lower incidence of side effects and a higher chance of achieving targeted hemoglobin, with an increase in hemoglobin levels at 4 weeks. Women who took parenteral iron preparations in the postpartum period had higher hemoglobin levels over the next 6 weeks and no side effects were observed by the gastrointestinal tract. Based on the available data on the effectiveness and side effects of the drug after the first trimester of pregnancy and in the postpartum period, it is possible to consider the appointment of parenteral iron preparations for women who have not been able to take peroral iron preparations, or did not respond to peroral therapy, or have severe iron deficiency during large periods of pregnancy.

Principles of treatment

Nomedicamentosis treatment: includes a diet rich in iron and protein (Appendix 2). With diet alone, Hb levels cannot be normalized, since less iron is absorbed (from meat — 20%, from plant products — 0.2%). To compensate for protein deficiency, it is recommended to eat with special medical foods rich in iron.

Medicamentous treatment should include the following stages:

- eliminate anemia;

-saturation therapy (restoration of iron reserves in the body);

-supportive therapy.

In the case of severe anemia (Hb <70 g/l) and/or severe symptoms or large (>34 weeks of pregnancy) periods of 3 months after taking peroral iron preparations, a* transition to specialized medical care is required if hemoglobin levels do not rise. When the hemoglobin level reaches the normal range, medicamentous treatment should be continued for 3 months and at least 6 months after childbirth.

In the treatment and Prevention of IDA medicamentosis during pregnancy, the following who principles should be followed: all pregnant women should take 50-60 mg of elemental iron per day to prevent IDA for 3 months during early pregnancy (up to 12 weeks) and after lactation. When a pregnant

woman is diagnosed with IDA, the Daily Dose is doubled. https://cyberleninka.ru/article/v/zhelezodefitsitnaya-anemiya-rofilaktika-i-lechenie-pri-beremennost

Against the background of inflammatory foci, chronic IDA in pregnant women, the main disease should be treated with iron preparations and human recombinant erythropoietin (HRE). HRE is a new effective method of treating anemia of any etiology, including pregnant women. A prerequisite for the use of the drug in case of anemia is insufficient saturation of the body with iron. The level of hemoglobin and the amount of erythrocytes increases within a few hours after the administration of exogenous erythropoietin. HRE therapy is an effective and safe way to treat anemia in pregnant women. If treatment of mild-Grade anemia after a 20-week period in pregnant women with iron preparations does not work, 2000 XB subcutaneous 3 injections 1 time a week, 2000 XB 4 injections subcutaneous 2 times a week in middle-grade anemia, 2000 XB 6 injections subcutaneous 3 times a week in severe-grade anemia, 2000 XB 3-5 injections subcutaneous daily for women who gave birth.

Iron deficiency anemia exists to carry pregnant women

Mild anemia: HB below 110-90 g/L, erythrocyte content 3.5-3,2x1012 g/L, ferritin below 15 mcg/L, hematocrit 32-27%.

Nutrition with products enriched in protein, iron, vitamins. 120 mg of iron and 400 mg of folic acid are taken daily. The effectiveness of the treatment is assessed after 2 weeks, and the level of hemoglobin is positively assessed if it is increased to 10 g/l, in which treatment will have to be continued for 3 months. If a positive result is not detected, it is transferred to parenteral iron preparations in daytime stationary conditions.

Intermediate anemia: Hb 90 to 70 g/l, erythrocyte levels 3.3-2,6x1012 g/l, ferritin 15 mcg/L, hematocrit below 28%. If the initial level of Hb is <90 g/l up to the >14-week period of pregnancy, and in the 3rd trimester of pregnancy, in the daytime stationary conditions, parenteral iron preparations are transferred.

Severe grade anemia: HB below 70 g / l, erythrocyte content 3.0-2,2x1012 g/l, hematocrit below 27% :

♣hematologist , therapist's advice;

♣ appointment of iron preparations depending on the body weight of a woman and the level of hemoglobin ;

♣ nutrition with protein, iron, vitamin-enriched products;

♣ iron carboxymaltose per 1000 mg or 20 mg of iron per 1 kg of body weight respectively;

♣ in chronic pyelonephritis, hyporegenerative anemia following ferroterapy, kun ora is assigned from HRE 2000 XB in the form of 3 injections.

First period of childbirth or before surgery:

iron carboxymaltose per 1000 mg or 20 mg of iron per 1 kg of body weight respectively; tranexamic acid is injected into a vein 15 mg/kg (2 ampoules 500 mg to 200 ml of saline solution) for 30 minutes before surgery; When Hb is 50 g/l and below, erythrocyte levels below 2.2 x1012 g/L and below are treated in RITB. The main indications for intravenous administration of iron preparations are as follows: when peroral iron preparations do not work; 14 weeks of gestation in the large term medium to severe IDA (hemoglobin <90 g/l); iron deficiency cases: ferritin <15 mcg/l, iron saturation of transferrin below 20%. The first method of choice for the treatment of IDA in the 3rd trimester and before childbirth (hemoglobin level below 90 g/l); contraindications to the oral administration of iron preparations in gastric ulcer, severe side effects and other cases.

Prevention

According to WHO recommendations, to prevent anemia, postpartum sepsis, the birth of low-weight babies and premature labor, pregnant women are advised to take prophylactic peroral iron preparations at a dose of 30-60 mg per day and folic acid 400 mcg during the entire period of pregnancy and the first three months of lactation 11. This recommendation applies especially to areas with an anemia rate of 20% or more in pregnant women, women with a high risk of developing iron deficiency (anemia in Anamnesis, multiple pregnancies, frequent childbirth, vegetarians, women with a high risk of bleeding, etc.). Taking iron preparations at low doses during pregnancy improves the hematological indicators of the mother, reduces the likelihood of developing iron deficiency, and no side effects are observed. The CDC recommends that all pregnant women take low-dose iron preparations on their first prenatal visit. To reduce the spread of anemia among pregnant women and mothers, it is recommended to take low doses of iron from the first trimester of pregnancy.

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