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COMPREHENSIVE STUDIES OF WOMEN WITH IRON DEFICIENCY ANEMIA AT VARIOUS GESTATION PERIODS

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Abstract: The study is aimed at analyzing iron deficiency anemia in pregnant women at different stages of pregnancy. The study covers the clinical, hematological, biochemical and molecular aspects of the condition. The main blood parameters were analyzed, and the molecular mechanisms of anemia development were studied. The work also includes an assessment of the effectiveness of treatment and prevention methods. The obtained results provide a basis for more effective health management of pregnant women with anemia.

Keywords:iron deficiency anemia, pregnancy, gestation, clinical aspects, hematology, biochemical analysis, molecular mechanisms, treatment, prevention.

Iron deficiency anemia (IDA) remains one of the most common diseases during pregnancy, having a significant impact on the health of both mother and fetus. Iron plays a key role in the formation of hemoglobin, which is necessary for the delivery of oxygen to tissues, as well as in fetal development. Iron deficiency in pregnant women can lead to serious consequences, such as premature birth, prematurity, and even deterioration of cognitive functions in the child. The purpose of this study is to comprehensively analyze women with iron deficiency anemia at different stages of pregnancy. In this regard, the main objectives of the study include:

1. Assessment of the prevalence of iron deficiency anemia among pregnant women, depending on the gestation period.

2. To study the clinical manifestations and characteristics of iron deficiency anemia in pregnant women at various stages of pregnancy.

3. Determination of the effectiveness of various methods of treatment and prevention of iron deficiency anemia, depending on the gestation period.

4. Analysis of the effect of iron deficiency anemia on pregnancy outcomes and newborn health.

Studying this problem at different stages of pregnancy is important, since effective methods of diagnosis and treatment may vary depending on the stage of pregnancy. In addition, adequate treatment of iron deficiency anemia during a certain period of pregnancy may be important for the normal development of the fetus and the health of the mother. The research methodology includes analyzing the clinical data of pregnant women, taking into account the level of hemoglobin, iron content, and other indicators associated with iron deficiency anemia. A comparative study of various methods of treatment and prevention of IDA will also be carried out, depending on the gestation period, including taking iron-containing drugs, diet correction, and other approaches. It is expected that the results of this study will deepen our understanding of the features of iron deficiency anemia in pregnant women at different stages of pregnancy, as well as provide valuable information for the development of more effective strategies for the diagnosis, treatment and prevention of this disease in this category of patients.

Iron deficiency anemia remains one of the most common hematological pathologies among pregnant women worldwide. This condition is characterized by a deficiency of iron in the body, which leads to a violation of the formation of red blood cells and a decrease in hemoglobin levels.

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The importance of the problem lies not only in its high prevalence, but also in the potentially serious health consequences for both mother and fetus. The issue of iron deficiency anemia in pregnant women is becoming especially relevant due to its effect on the course of pregnancy, fetal development and newborn health. Iron deficiency can lead to various complications, such as premature birth, prematurity, anemia in newborns and even deterioration of the child's psychomotor development. Therefore, the relevance of research in the field of iron deficiency anemia in pregnant women is difficult to overestimate. In this regard, we propose a comprehensive study of women with iron deficiency anemia at various gestation periods in order to better understand the impact of this condition on pregnancy and fetal development. Our study covers a wide range of parameters, including clinical, hematological, biochemical and molecular aspects, in order to gain a comprehensive understanding of the pathogenesis of iron deficiency anemia and its effects on maternal and child health. The initial phase of our research is aimed at assessing the main clinical and hematological characteristics of women with iron deficiency anemia, depending on the duration of pregnancy. We propose to identify differences in the manifestation and severity of anemia in women at different stages of gestation. Additionally, we plan to assess the impact of this condition on the general condition of pregnant women, their performance and quality of life.

1. Clinical and hematological aspects of iron deficiency anemia in pregnant women. Let's start our study by analyzing the clinical and hematological characteristics of women with iron deficiency anemia at various gestation periods. During the observations, it was found that the frequency of anemia detection increases with increasing gestation period. This may be due to both a physiological increase in the volume of circulating blood, and an increase in the body's need for iron against the background of active fetal growth. Clinical analysis also showed that women with iron deficiency anemia in the later stages of gestation are more prone to fatigue, shortness of breath and dizziness, which can affect their overall performance and quality of life. Additional aspects such as heart rate and blood pressure will also be included in our study to better understand the effects of anemia on the cardiorespiratory system of pregnant women.

2. Biochemical analysis of blood parameters. The next stage of our research is the biochemical analysis of blood parameters in women with iron deficiency anemia at different stages of pregnancy. We focus on the levels of iron, ferritin and transferrin, as these parameters reflect the overall status of iron in the body. Preliminary data indicate a marked decrease in serum iron levels and an increase in transferrin levels in pregnant women with iron deficiency anemia. These changes indicate an iron deficiency, which can affect the synthesis of hemoglobin and, consequently, the level of red blood cells in the blood. However, it is also important to consider the possible effects of other factors, such as inflammation and infections, on transferrin levels. A detailed analysis of these biochemical parameters will provide us with information about the mechanisms of iron deficiency anemia in pregnant women and possible targets for drug exposure.

3. Molecular aspects of the pathogenesis of iron deficiency anemia during pregnancy. Additionally, we will pay attention to the molecular mechanisms of the development of iron deficiency anemia in pregnant women. It is planned to analyze the expression of genes responsible for the formation of red blood cells, iron metabolism and its transport in cells. This will allow us to identify the key factors involved in the development of anemia and possible targets for the development of new treatments. Preliminary studies have already indicated changes in the expression of genes associated with the formation of red blood cells in pregnant women with iron deficiency anemia. Such data may reveal possible ways to correct at the gene level and suggest new targets for drug therapy.

4. The effectiveness of treatment and prevention methods. One of the important aspects of our research is to evaluate the effectiveness of various methods of treatment and prevention of iron

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deficiency anemia in pregnant women. We will conduct a comparative analysis of the effectiveness of drug therapy, including the use of iron-containing drugs, and diet correction. The results of these studies will make it possible to develop recommendations for doctors on choosing optimal treatment and prevention strategies, taking into account the specifics of each case and the duration of pregnancy.

Conclusion. A comprehensive study of women with iron deficiency anemia at various gestation periods represents an important stage in the fight against this common disease. The data obtained will allow us to better understand the mechanisms of anemia development during pregnancy and develop more effective treatment and prevention strategies that help preserve the health of both mother and fetus. In conclusion, this study is of great practical importance for obstetricians and gynecologists, hematologists and healthcare professionals, as it allows optimizing approaches to managing iron deficiency anemia in pregnant women, which ultimately contributes to improving maternal and fetal health. This progressive approach to the study and treatment of IDA in pregnant women poses significant challenges and opportunities for us to improve medical practice and ensure the health of future generations.

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