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STUDY OF MICRONUTRIENT STATUS OF PREGNANT WOMEN IN RURAL CONDITIONS

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Abstract. *The article is devoted to the study of the content of magnesium and iron in the diet, as well as their concentration in the blood of pregnant women.at the age of 21-34 years, living in the villages of Kashkadarya region,.*

According to the results obtained, the magnesium content in the daily diet of the subjects in the 1st trimester was close to normal (95.1%), and in the 2nd and 3rd trimesters - on average 45.9-59.1% higher than normal, while iron consumption in the 1st trimester is on average 52.8 - 80.04% of the norm.

Of the studied minerals, the concentration of magnesium in the blood serum relative to the norm (0.75-1.25 mmol / L) decreases in the 1st trimester by an average of 22.8%, in the 2nd trimester - by 20.8%, and in the 3rd trimester - by an average of 14.4%. The concentration of iron in the blood, on the contrary, in the 1st trimester, it was noted at the normal level (107.3%), and in the 2nd and 3rd trimesters - below the norm by an average of 32.4% and 36.5%, respectively.

Keywords: *ration, magnesium, iron, trimester, blood serum.*

It is known that the presence of mineral substances in daily meals is less or more than the norm, which causes various diseases in the body of mother and child. Therefore, their place in the diet of pregnant women, their biological importance in the vital processes of the mother and child's body have become among the most pressing issues in recent years. Such examinations were mainly conducted to study the ways of treatment and prevention of one or another disease. For example, in the middle of the last century, iodine element was studied in detail due to its connection with goiter disease, and iron and copper elements due to anemia [1-9].

In the life of mother and child, micronutrient deficiency and its prevention and elimination, organization of proper nutrition of pregnant women and study of their supply with certain mineral substances is one of the urgent issues in physiology and medicine.

Based on the above considerations, we aimed to study the provision of certain micronutrients to pregnant women living in rural areas.

Observations were conducted on 24 pregnant women aged 21-34 living in the Koson district of the Kashkadarya region. Their actual diet was studied using a traditional questionnaire-survey method. The concentration of studied mineral substances (magnesium and iron) in the blood was determined by immunoenzymatic analysis method. The measurements were carried out using a modern biochemical analyzer.

The results of the study of the amount of mineral substances in the daily food of pregnant women are presented in table 1 below, and their concentration in blood is presented in table 2.

Table 1

The amount of certain mineral substances in the daily diet of pregnant women

Indicators	Periods of pregnancy		
	1-trimester	2-trimester	3-trimester

	Normal measurement	The result	Normal measurement	The result	Normal measurement	The result
Magnesium, mg	**300**	**285,3±6,1**	**300**	**437,8±48,5**	**300**	**477,39±55,2**
Iron, mg	**25**	**13,2±0,73**	**25**	**18,7±1,61**	**25**	**20,01±1,61**

As can be seen in Table 1 above, the amount of magnesium in the daily food of the subjects is significantly different from the standard indicators established for them. In particular, the amount of magnesium in the 1st trimester is 285.3±6.1 mg, which is 95.1% of the norm. In the 2nd trimester, the amount of this substance was 437.8±48.5 mg, and in the 3rd trimester it was 477.39±55.2 mg, these indicators was more than the standard level, average 45.9 and 59.1%, respectively. It can be seen that the respondents consumed more magnesium-rich foods (pastry foods, legumes, dried fruits, etc.) in the 2nd and 3rd trimesters than in the 1st trimester. In addition, due to severe toxicosis and physiological changes occurring in the body in most cases in the 1st trimester of pregnancy, there was a corresponding difference in daily nutrition compared to the 2nd and 3rd trimesters. This situation also affects the daily need for food products.

Also, the above situation can be noted in relation to the amount of iron in the daily food of the subjects. In particular, the amount of iron in the food of pregnant women aged 21-34 years in the 1st trimester is 13.2±0.73 mg, which is 52.8% on average compared to the norm. In the 2nd and 3rd trimesters, the amount of iron was 18.7 ± 1.61 and 20.01 ± 1.61 mg, respectively, which in turn was 74.8 and 74.8 mg, respectively, compared to the norm. It is 80.04%. These indicators show an average of 36.7% less than the norm in all three trimesters of pregnancy.

Usually, in the first half of pregnancy, the amount of mineral substances in a woman's daily diet does not differ from the amount before pregnancy. Taking into account the nutritional and biological value of the diet for the period of organogenesis (formation of organs), it is necessary to have complete protein and micronutrients at the level of daily physiological norms.

It is known that in the second half of pregnancy, due to the increase in the weight of the fetus, placenta, mammary glands and uterus, the demand for all nutrients, including mineral substances, increases. Therefore, while studying the mineral supply of pregnant women, we also tried to study some minerals in their blood serum.

Studying the concentration of mineral substances in blood serum serves as an important indicator in the objective assessment of the supply of these micronutrients to the body. In this regard, the concentration of magnesium and iron in the blood serum of pregnant women was also determined during the examinations (Table 2).

It is noted in the literature that magnesium element actively participates in many vital processes and important activities of cells. If the body lacks magnesium, nervousness, sleep disturbance, rapid fatigue, headache and dizziness, sensitivity to weather changes, restlessness, irregular heartbeat, pain in the gastrointestinal system, diarrhea and other conditions occur. In addition, with its help, the passage of impulses along the nerve fiber is carried out. Also, this element is important in the prevention of sclerosis, myocardial infarction, nervous diseases, diseases of endocrine glands, cancer, etc. Plant and animal products such as freshly harvested wheat grains, beans, peas, soybeans, mash, egg yolks, cheese, yogurt, cream, fish, cabbage, beets, potatoes consumption in appropriate amounts is important (Qurbonov Sh.Q., 2018).

Table 2

Concentration of some mineral substances in blood serum of pregnant women

Indicators	Periods of pregnancy					
	1-trimester		2-trimester		3-trimester	
	Normal measurement	The result	Normal measurement	The result	Normal measurement	The result
Magnesium, mg	0,75-1,25	0,965±0,015	0,75-1,25	0,99±0,09	0,75-1,25	1,07±0,1
Iron, mg	9,0-30,0	32,2±0,005	9,0-30,0	20,3±4,2	9,0-30,0	19,06±0,89

According to the obtained results, the concentration of magnesium in the blood in the 1st trimester of pregnancy is equal to 0.965±0.015 mmol/l, which is 28.6% more than the lower value of the norm, and 22.8% more than the upper value. is less than or 102.9% on average compared to the norm. Also, the concentration of magnesium in the 2nd and 3rd trimesters is 0.99±0.09 and 1.07±0.1 mmol/l, respectively, and these indicators are on average 20% higher than the upper limit of the norm, respectively. .8 and 14.4% less.

It is known that the element of iron is very necessary for the body, especially for the body of pregnant women. This substance also actively participates in many important processes in the human body. Lack of iron during pregnancy leads to anemia in the mother's body. This situation can cause a pregnant woman to become weak and lethargic. Also, severe anemia in the mother can cause difficult development of the fetus, low birth weight of the baby, premature birth of the child, and even death of the fetus. Therefore, regular consumption of iron-rich foods is very important for the life of pregnant women. Natural products rich in iron and preventing anemia include sheep liver, beef tongue, buckwheat groats, pomegranate and its juice, and beets.

Today, iron deficiency anemia is observed not only in our Republic, but also worldwide. Therefore, many observations and studies are aimed at studying this issue. A lot of information about this can be found in the literature. All of them give one general conclusion, that is, iron deficiency anemia is very common among pregnant women today, and this condition is very dangerous for the body of both the mother and the unborn child. Therefore, in all countries, especially in developing countries, a large amount of work is being done to prevent such dangerous anemia and eliminate its unpleasant consequences. In particular, we present below the results obtained on the iron concentration in the blood serum of the respondents during the tests we conducted.

During the 1st trimester of pregnancy, the average concentration of iron in the blood serum of pregnant women under observation is 32.2±0.005 μmol/l, which is 107.3% of the upper limit of the norm on average. Also, iron concentration in the 2nd trimester was 20.3±4.2 μmol/l, and in the 3rd trimester it was equal to 19.06±0.89 μmol/l. These indicators indicate that they are less than the upper limit of the norm by 32.4 and 36.5%, respectively. Such a situation makes it impossible to have an adequate iron deficiency in the later stages of pregnancy. At the same time, this condition can cause physiological changes in the body of a pregnant woman related to the exchange of salts related to mineral substances. In particular, it can cause iron-related anemia in the mother and child.

Based on the above, it can be noted that in pregnant women living in rural areas, it is important to determine the monitoring of mineral substances in their diet and blood during the trimesters in order for the normal physiological changes of the organism of both the mother and the child during the process to proceed appropriately.

Having studied the supply of certain mineral substances to pregnant women aged 21-34 living in Kashkadarya region, we came to the following conclusions based on the results:

1. The amount of some mineral substances (magnesium and iron) in the respondents' daily food differs from the norm.

2. 2. It was found that the amount of magnesium contained in food consumed by the examinees was at the standard level in the 1st trimester of pregnancy, and this indicator was more than the standard level in the 2nd and 3rd trimesters.

3. Iron supply of pregnant women under observation was 52.8% on average in the 1st trimester of pregnancy, 74.8% in the 2nd trimester, and 80.04% in the 3rd trimester. organized.

4. The concentration of magnesium among the listed minerals in the blood serum of pregnant women decreases compared to the norm during pregnancy.

5. The concentration of iron in the blood serum of the examinees is at the normal level in the 1st trimester of pregnancy, in the 2nd trimester it is on average 67.6% of the norm, and in the 3rd trimester it is on average 63.5%.

6. Studying the supply of mineral substances to pregnant women is important in maintaining and strengthening the health of the mother and child. In this regard, one of the important practical measures is to form their rational diet and healthy lifestyle, and to promote the understanding of the topic among them.

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