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Different Laboratory Indicators of Micro and Macro- Elementary Status of the Normal and Innormal Organism of Females in Iron Deficiency

Ziyoda Rakhmonovna Sokhibova
Bukhara State Medical institute, Bukhara, Uzbekiston

Abstract: Using unified and developed methods, we studied some hematological, biochemical, and indicators of micro and macro element status of the body in Bukhara women of childbearing age with a normal hemoglobin health index and with iron deficiency. It was shown that there are certain pathological fluctuations in some hematological, biochemical and indicators of essential hematopoietic trace elements in women of childbearing age with the development of their iron deficiency state. In particular, hypoproteinemia, hypoferremia, hypocinemia, hypocupremia, and also hypertransferrinemia take place.

Keywords: trace element status, anemia, deficiency, fertile age.

With the occurrence of iron deficiency latent and and the manifestation of clinical signs, this condition has a high prevalence in various regions of the country and, in general, without regard to the ongoing research and ongoing reforms in the field of public prevention and control of anemia, iron deficiency in 30% of the population is significantly identified [1,2,3,6].Deficiency of the amount of iron in the body leads to a weakening of the immune system, a decrease in the saturation of tissues with granulocytes and macrophagestiradi, leads to phagocytosis, it reduces the reaction of lymphocytes to stimulation by antigens, and also leads to the formation of antibodies due to the low content of ferments, proteins and iron in the cells of the receptor apparatus [4,6]. Despite its name, iron deficiency anemia (TTA) is not the result of iron deficiency alone. Any microelement performs its biological functions with the help of many other microelements. They are part of ferments, vitamins, hormones and other biologically active substances. The main microelements: iron, iodine, copper, manganese, zinc, cobalt, molybdenum, selenium, chromium, fluorine.

As mentioned above, one of the main causes of TTA development and prevalence among women of fertil age (FY) is alimentary iron deficiency. At the same time, there are no conditions for the occurrence of monodeficitis, as indicated in practice and in real life, that is, in the clinic of diseases, violations of normal development [4,7]. Even if we imagine the presence of such a deficiency, for example, a deficiency of iodine in the endemic areas, this soon hinders the state of monodeficiency in the assimilation and metabolism of other nutrients, and the deficiency, of course, becomes a group or a complex condition. When it comes to iron deficiency, according to literature, it is quite natural to determine the paralell that other microelements, vitamins C, RR, B6, folic acid and vitamin B12 are not sufficiently supplied [4,6]. Of great scientific and practical importance is the joint study of various nutrients in this regard, first of all those that are directly related to hematopoiesis.

The purpose of this study was to investigate a number of biochemical parameters in healthy women of fertile age and women without iron deficiency. In order to compare the biochemical status of healthy women of Fertil age with the normal hemoglobin level, 46 women (average age - 31.7 years), who live permanently in the Gijduvan District of Bukhara region, aged from 20 to 35 years (average age - 23.6 years) and who do not have iron deficiency from 20 to 40 years (average age-31.7 years), were examined. The study was determined by single methods as described in hematological and biochemical parameters [5]. The state of micro-and macronutrients of the organism was analyzed using quantitative colorimetric methods. The results were processed by methods of data collection statistics.

Hematological and biological indicators of females

Learning indicators	Healthy women	In iron deficiency
Haemoglobin, g/l	120.0 -143.0	98.0-118.0
	(128.6 ±1.04)	(110.8 ± 1.01)
Eritrotcytis x 10^{12}/l	3.1 -4.4	3.4-5.0
	(3.9 ± 0.04)	(4.0 ± 0.05)
Leucosits, x 10^{9}/l	3.9-7.4	3.4-7.2
	(5.6 ±0.36)	(5.0 ±0.32)
Trombocytis, x 10^{9}/l	200.0-275.0	200.0-275.0
	(240.6 ± 4.56)	(218.0 ±4.12)
Colour indicators	0.81-1.1	0.70-0.90
	(0.96 ± 0.01)	(0.80 ±0.01)
Billuribynмкмol/l	8.9-14.3	9.0-12.3
	(11.4 ±0.21)	(10.8 ±0.15)
Common protein, g/l	67.0-85.0	60.0-72.0
	(75.3 ± 0.93)	(65.8 ± 0.56)
AlT, mkmol/l	13.0-28.0	11.0-36.0
	(19.6 ±0.55)	(18.3 ±0.86)
AsT, mkmol/l	15.3-28.3	16.6-31.0
	(21.5 ±0.53)	(22.6 ± 0.65)
Iron, mkmol/l	13.6-25.6	8.7-13.9
	(18.0 ±1.18)	(11.5 ±0.24)
Zinc, mkmol/l	14.1-25.9	9.4-15.6
	(19.4 ± 0.47)	(13.3 ±0.21)
Cuprum, mkmol/l	10.2-19.0	6.4-12.4
	(14.9 ± 0.35)	(9.3 ± 0.30)
Calsie, mkmol/l	1.97-2.74	1.16-2.20
	(2.59 ±0.13)	(2.50 ± 0.03)
Magnie, mkmol/l	0.50-1.15	0.61-1.10
	(0.765 ± 0.02)	(0.755 ±0.015)
Transferryn, g/l	3.00-3.60	3.65-4.24
	(3.27 ± 0.01)	(3.97 ± 0.03)
КНТ, %	15.3-34.6	8.0-15.5
	(22.6 ± 0.71)	(11.9 ±0.34)

As can be seen from the table below, in healthy FYA, the mean total hemoglobin was 128.6±1,04 G, with a change in this indicator from 120.0 g/l (min) to 143.0 g/L(max). The average level of total hemoglobin was significantly lower ($p<0.001$) and for the range of changes of this indicator was 110.8±1.01 gg from 98.0 g (min) to 118.0 g/l (max).

We did not find a statistically significant difference between the number of white blood cells and platelets-FYAga with iron deficiency and other morphological parameters of health-phyaperiferic blood (p> 0,05).

As expected, there is a statistically significant difference between an important indicator such as a color indicator that reflects hypochromia in VFS, which is a healthy FYA and iron deficiency examined. Thus, in healthy FYAda, this indicator is on average 0,96 ± 0,01, with the change of this indicator from 0,81 (min) to 1,1 (maximum), while in FYAda with iron deficiency this indicator is on average 0,80 ± 0,01. this is the change of the indicator from 0,80 (min) to 0,90 (maximum) (p <0,001).

The study of biochemical parameters reflecting the functional state of the liver of FYA and healthy FYA with iron deficiency showed that FYA with iron deficiency has bilirubinemia and hypoproteinemia compared to healthy FYA. Thus, the average content of iron deficiency bilirubin in FYAga studied was 10,8 ± 0,86 μmol/l when this index ranged from 9,0 μmol/L (min) to 12,3 μmol/l (maximum), while in normal this index ranged from an average of 11,4 ± 0,21 μmol/l (min) to 8,9 μmol/l (min) to 14,3 μmol/l (maximum).

The total protein level in the blood serum of women with checked iron deficiency is an average of 65,8 ± 0,56 g / l, in women with checked bun, this indicator can vary from 60,0 g / l to 72,0 g / l. max), which indicates a hypersensitivity to hypoproteinemia in women with iron deficiency. In a healthy checked FYAda, the average level of protein is an average of 75,3 ± 0,93 g/l, with a change in the biochemical index from 67,0 g/l (min) to 85,0 g/l (maximum) (p <0,001) .

Comparative analysis of enzyme indices in FYA and healthy serum with iron deficiency revealed statistically significant differences between them (p> 0,05).

Analysis of the state of microelements of FYA and sağlamomfya, who had iron deficiency, showed that there was iron deficiency in hypoferremia, hyposinemia and hypocopremia when it was detected. Thus, in FYAda with iron deficiency, the iron level decreases on average to 11,5 ± 0,24 mmol/l, which varies from 8,7 mmol/l (min) to 13,9 mmol/l (maximum). compared with the iron level in healthy FYA-an average of 18,0 ± 1,18 mmol/l, the change in this indicator from 13,6 mmol/l (min) to 25,6 mmol/l (maximum) (p <0,001). The level of zinc in the blood serum is also significantly reduced to an average of 9,4 ± 15,6 mmol/l (maximum) with a change from 0,13,3 mmol/l (min) to 0,21 mmol/l (maximum) compared to the level of zinc. healthy FYA blood serum-an average of 19,4 ± 0,47 mmol/l, with a change in this indicator from 14,1 mmol/l (min) to 25,9 mmol / l (maximum) (p <0,001).

The level of other important hematopoietic microelements contained in GFW, which is iron deficiency, is also reduced compared to the healthy FYA index. On average,FYA with iron deficiency, Copper in the blood serum is 9,3 ± 0,3 μmol/l, this indicator is a healthy Fyacarum level, ranging from 6,4 mmol/l (min) to 12,4 μmol/l (maximum). copper is on average 14,9 ± 0,35 μmol/l, the change of this indicator from 10,2 μmol/l (min) to 19,0 μmol / l (maximum) (p <0,001).

Comparative analysis of the content of important hematopoietic microelements in the serum shows that the average level of zinc in the serum exceeds the level of iron, the level of zinc and iron exceeds the level of copper in the serum.

In the composition of magnesium with other trace elements, we did not find statistically significant differences between iron deficiency FYA and healthy FYA (p> 0,05).

The content of essential macronutrient calcium in the blood serum also showed no significant difference in the content of this macronutrient (p> 0,05).

Hypertransferrinemia, that is, a compensatory increase in the Iron-carrying protein content in the blood serum against the background of hypoferremia, is a characteristic phenomenon for FYA, which is iron deficiency.

On average, in FYA blood serum with iron deficiency, this protein content is 3,65 ± 0,03 g/l, with a change in the indicator from 3,65 g/l (min) to 4,24 g/l (maximum). in healthy, however, this indicator is 3,27 ± 0,01 g/l in weight, with a change in the indicator from 3,00 g/l (min) to 3,60 g/l (maximum) (p <0,001).

The saturation of the total reserve of serum transferrin to FYAga without iron is clearly reduced by iron, and the average figure is 11,9 ± 0,34%, which varies from 8,0% (min) to 15,5% (maximum). The saturation index of FYA transferrin with iron is on average 22,6 ± 0,71%, which is from 15,3% (min) to 34,6% (maximum) (p <0,001).

Thus, a comparative study of some hematological, biochemical parameters and indicators of the state of micro and Macroelements of the body of FYA indicates that the development of iron deficiency in the body, in some cases, leads to a change in the indicators that reflect the state of blood. functional state of the liver and the state of microelements. This phenomenon can be used in monitoring the state of the body of the FYA, observing the effectiveness of the measures taken against the background of iron deficiency in women.

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