Risk factors of progression of iron deficiency anemia among women of childbearing age
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Факторы риска развития железодефицитной анемии у женщин репродуктивного возраста
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Abstract: *iron deficiency anemia (IDA) still occupies the leading position in the prevalence structure of diseases among women of childbearing age not only in Uzbekistan, but also throughout the world. According to data provided by the World Health Organization, 1 987 300 people around the world suffer from anemia, i.e. it is one of the most frequent, if not the most frequent, disease group.*

Аннотация: *железодефицитная анемия (ЖДА) продолжает занимать ведущую позицию в структуре заболеваемости женщин репродуктивного возраста не только в Узбекистане, но и во всем мире. По данным ВОЗ, анемия имеется у 1987300000 жителей планеты, т.е. это одна из частых, если не самая частая, группа болезней.*

Keywords: *iron deficiency anemia, childbirth age, pregnancy, COC, hemoglobin, erythrocytes.*
Ключевые слова: *железодефицитная анемия, репродуктивный возраст, беременность, КОК, гемоглобин, эритроциты.*

In some regions of the world IDA prevalence fluctuates from 21 to 80%. Traditionally, females suffer from this disease several times more, than males. It is widely known, that cause of the iron deficiency anemia in the human body is the fact that iron discharge is higher compared with its intake. It is connected with the fact that alongside with such widely existent causes of IDA progression, as various lesions of gastrointestinal tract (GIT), which occur among men almost as often as among women, there is a number of physiological and pathological conditions specific to women, which cause chronic hemorrhage and iron deficiency [2, p. 127] That is why, the problem of IDA is of very high importance for such branch of the medical science as obstetrics and gynecology.

IDA – is a condition, which is characterized with reduction of hemoglobin and erythrocyte content in the blood unit volume, which is caused by the iron deficiency and following characteristic symptom complex and certain laboratorial indicators. It is categorized as hypochromic anemia, where the color indicator is below 0,9 (MCN below 27pn) [1, p. 131]

Taking into account the burdening impact of IDA on women of childbearing age, especially on pregnancy progression and childbirth process, as well as the fact that during the pregnancy and lactation the demand for iron grows on 1 070mg, the purpose of the given research was: to investigate the health conditions of the women of child-bearing age, who suffer from IDA. We examined health conditions of women of child-bearing age suffering from IDA. In total, 125 women between 18-45 years were examined. All the patients were grouped into two groups: main group – 50 women, who were recommended to follow continual regime of Controlled oral contraception, after the medical examination; and control group – 75 women, who were recommended to follow standard regime of controlled oral contraception taking with the purpose of prolongation of inter-gravidar interval.

Degree of anemia severity was identified in accordance with the WHO classification: anemia of light severity – concentration of hemoglobin in blood from 110 to 90 g/l; moderate anemia – concentration of hemoglobin in blood from 89 to 70 g/l; serious anemia – concentration of hemoglobin in blood below 69 g/l. Analysis of anamnesis data of the given patients illustrated that, all given women suffered from various infectious diseases during their childhood, including children's infections: measles-70 (56%), scarlet fever – 18 (14,4%), chickenpox – 59 (47,2%), German measles – 32 (25,6%), epidemic parotiditis – 27 (21,6%), angina – 50 (40%) and 51 (40,8%) indicated following extra-genital diseases in their anamnesis: chronic tonsillitis – 25 (20%), pneumonia – 4 (3,2%), gastritis – 43 (34,4%), cholecystitis – 2 (1,6%), cystitis – 6 (4,8%), pyelonephritis – 18 (14,4%), and, it has to be mentioned that every second patient had 2-3 extra-genital diseases. Besides that, 110 (88%) and 119 (95,2%) had indicated flu and acute respiratory virus infection correspondingly.

Average age of menarche – $12,0 \pm 1,19$ years. Duration of menstrual cycle of 5 patients (4%) equaled 23 days, 99 of patients (79,2%) showed 24-28 days and 21 (16,8%) women's duration was from 29 to 35 days. Average duration of menstrual cycle was $27,36 \pm 3,18$ days. Menstruation of 55 (44%) women lasted 3-5 days, 61 women (48,8%) indicated 5-7 days and 9 women (7,2%) experienced menstruation of more than 7 days. Average indicator of menstruation duration $5,31 \pm 1,09$ days.

Anamnesis of 116 women (92,8%) contains information on pregnancy. Majority of women – 94 (75,2%) had from 1 to 3 pregnancies. At the same time, anamnesis of majority of women showed child-birth: 50 women (44%) – 1 delivery at term, 30 women (10,2%) – 2, 22 women (16,8) – 3 and 14 women (13,6%) had 4 deliveries. Abdominal delivery was experienced by 31 (24,8%), including 9 women (7,2%) who had such experience more than

once. Bleeding during the pregnancy and delivery process was indicated by 22 (17,6%) women. Pregnancy of 62 (49,6%) women ended with the therapeutic abortion, including 23 women (37%) who had 1 abortion, 18 women (29%) had 2 abortions, 7 women (11,3%) – 3 abortions and 14 women (22,6%) had spontaneous abortion. Anamnesis of 24 women (19,2%) contained information on diseases of the neck of uterus, 12 women (9,6%) had hysteromyoma and 9 women (7,2%) had ovarian cyst. According to anamnesis, dysmenorrhea, premenstrual syndrome (PMS), menorrhagia, irregular menstrual cycle made 51,2% in total structure of disease incidence.

Normal body constitution was identified among 102 (81,6%) of women, asthenic type of body was found among 12 (9,6%) women and hypersthenic constitution was found among 11 (8,8%). Body build index of 118 (94,4%) women was normal, and weight reduction was observed among 7 (5,6%).

Indicators of arterial pressure were within the limits of the physiological standard and did not exceed 120 mm mc – systolic pressure and 80 mm mc – diastolic pressure (table 1).

Table 1. Average indicators of blood pressure, body weight of women before inclusion in research

Indicators	Average ± m
Systolic pressure (mm mc)	113,08 ± 4,47
Diastolic pressure (mm mc)	73,33 ± 4,43
Body weight (kg)	63,13 ± 7,35

Distribution of women depending on the severity of anemia in the groups is provided in the table 2.

Table 2. Distribution of women depending on the severity of anemia

Severity of anemia	Main group	Control group
I	21(42%)	31(41,3%)
II	23(46%)	35(46,7%)
III	6(12%)	9(12%)
Total	50(100%)	75(100%)

As it can be seen from the provided table, both groups are comparable in terms of anemia severity.

Information on existence of sideropenic syndrome (deficiency of iron in tissues) among investigated patients of both groups is provided in the table 3.

Table 3. Symptoms of sideropenic conditions of the patients suffering from IDA

Symptoms	Number of patients	
	Abs	%
Paleness, xeroderma and skin fissure, yellowness of hands and nasolabial triangle	122	97,6
Blue color of sclera	87	69,6
Fragility of nails, their flattening and appearance of cross striation (spoon nail)	81	64,8
Dysgeusia (pica chlorotika) and parosmia: desire to eat chalk, clay, raw cereals, smell liquids with sharp odor	86	68,8
Dryness, fragility and falling out hair	75	60
Glossitis and angular stomatitis	3	2,4
Dysphagy and esophagitis	3	2,4

As it can be seen from the provided table almost all patients suffering from IDA had clinical symptoms of sideropenia.

In our investigation, general anemic syndrome, as a result of hypoxemic lesion of various organs and body systems, was observed among all patients with average level and serious level of evidence and among more than half of patients with light evidence of disease. Information about it is provided in the following table 4.

Table 4. Symptoms of general anemic syndrome among patients with IDA

Symptoms	Number of patients	
	Abs	%
Changes in functional condition of CNS: reduction of mental and physical performance, increased fatigability	99	79,2
Disorder in gastrointestinal motility (constipation, diarrhea, pain in epigastric part of the body)	83	66,4
Disorder of functional condition of gastrointestinal sphincters and sphincters of urinary system (esophagitis, heartburn and enuresis)	81	64,8
Muscle weakness	73	58,4

Lesion of cardiovascular system: palpitation, arterial hypotension, dyspnea, apical systolic murmur	92	73,6

Gynecological study.

During the study we didn't find any pathological changes of external genitalia among the patients. Adult woman pattern of hair distribution was observed in all cases. Majority of women 118 (94,4%) had body of womb of normal sizes. Body of womb of 2 patients (1,6%) had slightly larger sizes. Small myomatous ganglions on the posterior of 5 women (4%) were palpated. Uterine appendages of 97 women (77,6%) were not identified and their palpation was painless. Painless taenias were found during palpation of uterine appendages of 28 women (22,4%).

Gynecological diseases of 49 women (39,2%) were discovered.

22 women (17,6%) had ectopia of neck of uterus, 21women (16,8%) had vulvo-vaginitis, 19 women (15,2%) – bacterial vaginosis, 28 women (22,4%) – chronic salpingophoritis in the remission stage and 10 women (8%) had hysteromyoma. During the ultrasound scanning of the small pelvis organs small-sized intermuscular-subserous myomatosis ganglions were discovered at 10 women (8%). In general, average indicators of neck of uterus sizes and sizes of ovaries corresponded with the similar indicators of the healthy women of child-bearing age. Diagnosis of IDA was confirmed using information and findings of laboratory examination. Condition of red blood of the patients with anemia prior to regime of controlled oral contraception is provided in the table 5.

Table 5. Indicators of red blood of the patients with IDA

Indicators	Main group			Control group		
HGB (g/l)	I(n=21)	II(n=23)	III(n=6)	I(n=31)	II(n=35)	III(n=12)
	101,1±7,4	87,0±2,7	69,2±1,1	102,3±6,1*	85,0±1,9*	68,5±0,9*
RBC	3,0±0,4	2,8±0,2	2,3±0,2	2,9±0,8*	2,7±0,5*	2,5±0,1*
IST (%)	31±0,1	27±0,6	25,1±0,3	30±0,8*	26,4±0,9*	25,2±0,5*
MCV (f/l)	72±1,6	69±0,9	64,3±1,4	72±1,4*	68,7±1,0*	63,6±1,6*
Men (p/g)	23±0,8	20,3±1,2	17,2±1,1	24±0,4*	21,1±0,9*	17,0±1,5*
Mens (g/l)	320±16,5	291,1±9,6	277,2±6,4	317,0±18,1*	290,0±1,0*	276,4±5,7*
RDVV-CV (%)	14,5±1,1	15,2±0,4	17,7±1,0	14,3±1,0*	15,1±0,7*	17,1±1,2*
RDVV-SD (f/l)	35,1±1,7	31,1±1,2	27,4±0,9	35,0±1,9*	30,9±1,4*	27,5±1,8*
Serum iron (mcmol/l)	12,0±0,2	10,2±0,5	8,7±1,0	12,1±0,3*	11,0±0,7*	8,5±1,1*

Note*: reliability of discrepancies with the main group, $p > 0,5$.

As it can be seen from the table, prior the regime of controlled oral contraception indicators of red blood in both groups did not vary considerably. The level of changes in the main indicators correlated with the level of anemia evidence. Hence, the cause of the iron deficiency among the women of child-bearing age in our research was malfunction of its balance towards the dominance of the iron discharge over its intake as a result of chronic diseases, big number of deliveries and abortions, voluminous menstruation and eating misbehavior.

References

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