European Journal of Interdisciplinary Research and Development
Volume- 43 September- 2025
Website: www.ejird.journalspark.org ISSN (E): 2720-5746

DEGREE I IRON DEFICIENCY ANEMIA IN CHILDREN OF UZBEKISTAN

Asrorov Akmal Aminjonovich
Bukhara State Medical Institute

Abstract
This article studied patients with IDA, determined the mild degree of the disease in children and highlighted the general condition of the examined patients. It is explained that it causes anemia, gastrointestinal tract problems, rickets, and frequent colds.

Keywords: IDA, starch, Asthenoneurotic syndrome, rickets, ARVI, lethargy, asthenia, apathy.

Introduction

In this work, 52 patients with IDA were studied; a mild degree of the disease (grade I severity) was detected in 20 children, which amounted to 38.5% of the total number of patients examined. In (13-46%) of the examined children, when collecting anamnesis, prematurity was revealed, 57.69% were born to mothers with IDA, including those of the same age; children with intrauterine growth retardation accounted for 6.97%, and 8.13% with blood loss of mothers during childbirth.

All children had nutritional disorders, that is, nutritional factors leading to insufficient intake of iron into the body. Of these, 44.18% were children who were bottle-fed from birth with non-adapted formulas, in particular, without the addition of iron; late introduction of complementary foods was detected in 37.2% of children and in 33.7% - an abundance of whole cow's milk in the diet baby.

In addition, it was found that bottle-fed children were given semolina porridge 3-4 times a day for the development of the child. But semolina contains a lot of starch, its caloric content is off the charts, so frequent consumption of semolina porridge by a baby (especially if you feed him more than once a day, but replace it with mixtures) leads to calorie overfeeding and the development of obesity. Semolina is rich in phytin, and phytin contains phosphorus, which binds calcium salts and prevents them from passing from the child's intestines into the blood. As soon as there are fewer salts, the parathyroid glands "wash" them out of the bones and send them into the blood. Semolina porridge is prepared with cow's milk, which, in turn, complicates the absorption of iron. This leads to anemia, disruption of the gastrointestinal tract, rickets, as well as frequent colds and constant runny nose, which can subsequently affect the child's health during school years.

The clinical picture was characterized by a set of general symptoms of the disease. Asthenoneurotic syndrome was observed in 12 (60%) children who exhibited increased fatigue, irritability, sweating, in 25% (5) cases there was a lag in psychomotor development, lethargy, asthenia, apathy, and loss of appetite. Epithelial syndrome was observed in 15% (3) of cases, which was manifested by pallor of the skin and mucous membranes, peeling of the epidermis with koilonychia, thinness, sparseness and increased fragility of hair, a polished red tongue, and unstable stool. In 25% (5) of cases, muscle syndrome was observed, which was manifested by

muscle hypertension, fatigue and urinary incontinence. Secondary immunodeficiency syndrome was manifested by frequent acute respiratory viral infections, pneumonia and intestinal infections.

When examining the digestive organs, (4) 20% of children had moderate bloating, (3) 15% had an enlarged liver by 3-4 cm, 10% (2) of patients had unformed, mushy stools, 5-6 times a day, "sheep feces" was noted in 5.0% (1) of children, the Chulitskaya index ranged from 14.2-17.5 cm. Below is a table characterizing red blood indicators in IDA stage I, in comparison with healthy children (Table 1).

Blood for IDA stage I (M+m)

Таблица 1

Indicators	Contingent		p-
	Healthy (n=25)	Patients of stage I IDA (n=20)	
Erythrocyte, 10|2/l	4,10±0,21	3,85±0,45	>0,1
Hemoglobin, g/l	118,21±2,81	98,12±2,05	<0,001
Hematocrit,	0,34±0,07	0,31±0,03	>0,1
Fetal hemoglobin, %	3,41±0,59	8,08±0,27	<0,001
Reticulocytes, %o	6,OHO,74	8,02±0,27	<0,01
PVE, days	83,52±3,13	72,56±2,11	<0,002
SDE, µm	7,73±0,14	7,54±0,03	>0,1

* Note: - reliability of P in relation to healthy people.

As follows from this table, with grade I IDA, the number of red blood cells and hemoglobin level decrease, while HbF increases. In parallel with the increase in fetal hemoglobin, a statistically significant increase in reticulocytes was noted, while the EDS did not change significantly. And in the group of healthy children, the indicators of the erythrocyte system were normal. (Fig. 1.).

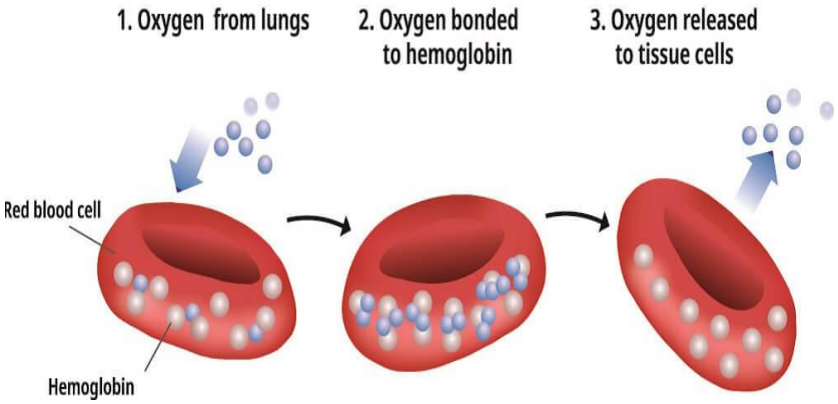

Fig. 1. The structure of an erythrocyte in healthy children.

In the blood of children during the period of advanced clinical manifestations of grade I IDA, no significant deviations from the norm were detected in the dynamics of red blood indices (Table 2).

Table 2

Indicators	Contingent		P*
	Healthy (n=25)	Patients of stage I IDA (n=20)	
SSGE, pg	28,10±0,27	27,05±0,38	>0,05
SKGE, %	28,60±0,31	31,72±0,46	<0,02
ESR, µm3	86,60±0,74	84,65±0,48	>0,1

Note: - reliability of P in relation to healthy people.

Red blood indices in IDA stage I (M±m)

Consequently, no statically significant changes are observed in the quality indicators of red blood in IDA stage I, although the hemoglobin content in the erythrocyte and the average volume of the erythrocyte tend to decrease.

Based on the above, we can conclude that, apparently, one of the mechanisms in the changes in the erythrocyte system in IDA of the first degree is a moderate slowdown in hemoglobin synthesis. In this regard, we studied the protein content and iron metabolism in the observed children (Table 3).

Table 3.

Indicators	Contingent		P*
	Healthy (n=26)	Patients of stage I IDA (n=20)	
Total protein, g/l	67,63±2,07	55,77±2,21	<0,001
Albumin, g/l	58,97±1,17	52,52±2,54	>0,1
Globulins, %	38,25±1,22	35,38±1,45	>0,1
a-1	5,16±0,93	5,52±0,17	>0,1
a-2	8,23±0,97	7,11±1,25	>0,1
β	12,51±1,01	16,22±0,42	<0,01
γ	17,45±1,21	18,61±1,35	>0,1
A/G coefficient	1,55±0,18	1,01±0,15	>0,1

Note: - reliability of P in relation to healthy people.

Indicators of total protein and its fractions in IDA stage I (M±m).

As follows from this table, in case of IDA of the first degree, a quantitative disturbance of the total protein and its fractions in the blood serum is observed. The decrease in the total amount of protein occurs mainly due to albumin and slightly to the globulin fraction. Based on this, it can be assumed that albumins in the blood serum, due to their low molecular weight and especially pronounced hydration, maintain a constant plasma volume. This causes water to move from the vessels into the tissues and back. As can be seen from the tables, 3. there is a significant decrease in total protein (P <0.001) due to albumins and globulins (P>0.1), while there is an increase especially in the p-fraction.

Along with changes in the quantitative and qualitative indicators of peripheral erythron and protein fractions in IDA stage I, some changes in iron metabolism were noted. Thus, in this case, the level of serum iron decreases by approximately 30.0%, with a

normal coefficient of transferrin saturation with iron.

One of the important characteristics of the body's state in IDA is the reaction of red blood, the assessment of which in practice is most often carried out by morphological, biochemical, cytochemical and other research methods only by light microscopy. Studying the morphology of red blood cells in the native state in IDA and in association with pneumonia using the FCM method is not enough. We were unable to find similar works, both in domestic and foreign literature.

The results of our studies in healthy infants and patients with grade I IDA are shown in Table 4.

Table 4

Indicators	Contingent		
	Healthy (n=25)	Patients of stage I IDA (n=20)	p*
Discocytes, %	84,35±3,43	77,31±1,37	<0,05
Spheroids, %	6,95±0,87	8,54±1,42	>0,05
Stomatocytes, %	4,00±0,24	5,86±0,18	Г<0,001
Spherocytes, %	0,53±0,07	1,634=0,09	>0,001
Deformed cells,%	3,054=0,11	4,82±0,26	>0,02
Echinocytes, %	1,02±0,17	1,84±0,22	<0,01
PE, 1 minute	56,25±2,48	42,87±1,39	<0,01

* Note: - reliability of P in relation to healthy people.

Morphofunctional features of erythrocytes in IDA stage I (M±m)

As can be seen from table. 4. In case of IDA of the 1st degree, out of 7 parameters of erythrocyte morphofunction, 5 show statistically significant changes. An increase in the number of spheroids, stomatocytes and an almost 10-fold increase in deformed erythrocytes was revealed, along with a slight decrease in discocytes and erythrocyte pulsation.

With deficiency anemia of the first degree, the predominance of the hemolytic process is not observed; a decrease in the number of red blood cells and hemoglobin occurs as a result of a reduction in average life expectancy. The content of sulfhydryl groups, lipoproteins in erythrocytes, the percentage distribution of cells according to the concentration of this substrate in them remained a violation, an increase in the number of spheroids is considered as a nonspecific phase of a quantitative type of compensatory-adaptive reaction of the erythrocyte system.

In children with iron deficiency anemia of the first degree, pneumonia began acutely with catarrhal manifestations and fever. In the clinic, the hematological picture at the height of acute pneumonia differed little from that in children without deficiency anemia. However, pneumonia had an undulating course and complications developed more often.

REFERENCES

1. Хасанов, С. А., Асроров, А. А., & Вохидов, У. Н. (2006). Распространенность хронического тонзиллита в семье и его профилактика. Врач-аспирант, 12(3), 214-218.
2. Khasanov, S. A., Asrorov, A. A., & Vokhidov, U. N. (2006). Prevalence of chronic family tonsillitis and its prevention. Vestnik Otorinolaringologii, (4), 38-40.
3. Асроров, А. А., & Вохидов, У. Н. (2006). Частота встречаемости гаптоглобина и церулоплазмина у детей больных хроническим тонзиллитом. Врач-аспирант, 11(2), 180-184.
4. Асроров, А. А. (2020). ЧАСТОТА ВСТРЕЧАЕМОСТИ ГАПТОГЛОБИНА И ЦЕРУЛОПЛАЗМИНА У ДЕТЕЙ БОЛЬНЫХ ХРОНИЧЕСКИМ ТОНЗИЛЛИТОМ. Новый день в медицине, (4), 626-629.
5. Асроров, А. А., Гафарова, С. У., & Мухамеджанова, М. Х. (2016). Формирование хронического тонзиллита у детей в зависимости от клинико-иммуногенетических факторов. Педиатрический вестник Южного Урала, (2), 10-20.
6. Асроров, А. А., Юлдашева, Р. У., Халилова, Ф. А., Ашурова, Н. Г., Адизова, Д. Р., & Джураева, Н. О. (2020). Dermatoglyphic indexes of hand fingers at children with chronic tonsillitis. Новый день в медицине, (1), 136-139.
7. Асроров, А. А., Юлдашева, Р. У., Халилова, Ф. А., Ашурова, Н. Г., Адизова, Д. Р., & Джураева, Н. О. (2019). DERMATOGLYPHIC INDEXES OF HAND FINGERS AT CHILDREN WITH CHRONIC TONSILLITIS. Новый день в медицине, (4), 215-218.
8. Асроров, А. А., Ярикулов, Ш. Ш., & Турдиев, М. Р. (2017). Особенности встречаемости и повышение эффективности лечения семейного хронического тонзиллита у детей. Вестник Совета молодых учёных и специалистов Челябинской области, 3(2 (17)), 14-23.
9. Асроров, А. А., & Аминжонова, Ч. А. (2021). ОИЛАВИЙ ШИФОКОР АМАЛИЁТИДА ИНСУЛЬТ ЎТКАЗГАН БЕМОРЛАРДА КОГНИТИВ БУЗИЛИШЛАР ҲОЛАТИНИ БАҲОЛАШ. ЖУРНАЛ НЕВРОЛОГИИ И НЕЙРОХИРУРГИЧЕСКИХ ИССЛЕДОВАНИЙ, (SPECIAL 1).
10. Асроров, А. А., & Аминжонова, Ч. А. (2021). Оценка Состояния Когнитивных Нарушений У Пациентов Перенесших Инсульт В Практике Семейного Врача. CENTRAL ASIAN JOURNAL OF MEDICAL AND NATURAL SCIENCES, 397-401.