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# SECRETARY FUNCTION OF THE STOMACH IN YOUNG CHILDREN, PATIENTS WITH IRON DEFICIENCY ANEMIA, DEPENDING ON THE TREATMENT METHODS

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## ABSTRACT

According to the WHO, more than 1.5 billion people with anemia are registered every year, almost 50% of cases are due to iron deficiency. The UNICEF Micronutrient Initiative shows the relationship between iron deficiency anemia and such economically significant factors as decreased real performance, increased maternal mortality, and negative impact on the physical and mental development of the child.

In the treatment of patients with iron deficiency anemia, it is necessary to eliminate the etiological and pathogenetic causes, because without this, it is impossible to treat anemia (2.6).

In case of mild and moderate anemia, to restore the secretory function of the stomach and clinical and hematological parameters, it is sufficient to correct nutrition according to age, include fruit vegetable juices, prescribe a solution of hydrochloric acid or natural gastric juice, iron preparations (3.5). Patients with severe anemia of complex treatment, including prednisone, had even better treatment results. Clinical and hematological changes recovered faster, the secretory function of the stomach returned to normal in most patients.

Therefore, when prescribing therapy for patients with iron deficiency anemia, it is necessary to take into account drugs that improve the secretory function of the stomach, which increase the digestion and absorption capacity of the gastrointestinal tract.

**Keywords:** children, iron deficiency anemia, iron deficiency, decreased secretion, decreased gastric acidity.

## INTRODUCTION

One of the most common pathological conditions that general practitioners encounter on a daily basis is anemic syndrome. Its etiology is different, a decrease in the content of hemoglobin, erythrocytes per unit volume of blood can be the result of many diseases and pathological conditions. Of great importance in the development of anemia in children is improper, inappropriate nutrition, improper feeding regime, untimely complementary feeding, prolonged presence of children only in breastfeeding, late giving of juices and vitamins.

Rational nutrition ensures the normal course of all life processes in the body and increases resistance to diseases, therefore, all children with iron deficiency anemia, regardless of treatment methods, need to be prescribed a balanced diet, according to age, regimen and care. The nutrition of a child suffering from anemia should contain all the main food ingredients: proteins, fats, carbohydrates, trace elements, vitamins.

The main materials for building hemoglobin are proteins and iron. Iron supplementation plays an important role in the treatment of anemia. Iron's primary role is to stimulate the bone marrow. Especially it is necessary to pay attention to the appointment of vegetables, fruits and other types of food, which contain not only iron, but also other trace elements, electrolytes and vitamins, since the iron of food is better absorbed than pharmaceutical preparations (1.4).

We consider the appointment of such products as expedient: salad, tomato juice, apples, egg yolk, cottage cheese, liver, which contain more trace elements, and in the complex of treatment for children with anemia, a general strengthening treatment - rubdown, air and sun baths, massage, gymnastics was prescribed.

Corticosteroid hormones have won a solid place in the arsenal of active agents for the treatment of many diseases of childhood and are widely used in pediatric practice. The hormones of the adrenal cortex, in contrast to the hormones of other endocrine glands, are directly related to the regulation of the secretory function of the stomach, increases the acidity and the digestive activity of gastric juice.

When prescribing hormones to young children with anemia, M.I. Dubrovskaya (2015) noted a clinical effect by the end of the 1st week of treatment: the children became active, their appetite improved, and the hemoglobin content increased (3).

**The aim of the study was** to determine the secretory function of the stomach in young children with iron deficiency anemia, depending on the methods of treatment.

## MATERIALS AND METHODS OF EXAMINATION

We examined 42 young children. Depending on the methods of treatment, the patients were divided into 2 groups: the first group consisted of 20 patients; they received iron preparations as the main antianemic therapy; the second group consisted of 22 patients who received antianemic therapy and prednisolone.

Studies of gastric secretion with iron deficiency anemia were carried out before and after treatment with iron preparations. In the first group, patients were mainly with mild and moderate anemia. The results of analyzes of gastric secretion before treatment showed that it was significantly impaired, the amount of gastric juice was small, the pH of the gastric juice was alkaline, the content of total acidity, free hydrochloric acid, and pepsin activity was reduced.

After treatment of this group of patients with iron preparations, the amount of gastric juice increased by 1.5 times, total acidity by 1.5 times, free hydrochloric acid by 3 times ($3.9 \pm 0.57$, after treatment $9.9 \pm 0.69$ , pepsin activity 1.5 times ($10.3 \pm 0.85$, after treatment $12.3 \pm 0.76$).

In the majority of patients in this group, the recovery of clinical and hematological parameters began by the end of the second or third week from the start of ferrotherapy. The daily increase in hemoglobin averaged $0.52 \pm 0.04$ units.

In the second group, patients with iron deficiency anemia included prednisolone in the complex of treatment. The bulk of this group consisted of patients with severe anemia. Prednisolone was prescribed to patients when the anemia persisted for a long time, complex antianemic treatment (rational, age-appropriate diet rich in vegetables and fruits, prolonged exposure to fresh air, iron supplements, vitamin B complex, ascorbic acid, gymnastics, massage) had an insignificant effect.

The drug was prescribed at the rate of 1 mg per kg of body weight with a dosage decrease every 3-5 days by 2.5 mg (1/3 and 2/3 of the initial dose). The duration of treatment is from 9 to 12 days. In parallel with taking prednisolone, potassium salts were prescribed.

The secretory function of the stomach in this group of patients before treatment was more suppressed than in the previous one. The amount of gastric contents was greater than we associated with an increase in mucus

content and a lower content of free hydrochloric acid; in more than half of the cases, the absence of free hydrochloric acid was noted.

After treatment, the pH of gastric juice became more acidic (before treatment 4.9, after treatment 3.8), free hydrochloric acid increased 4 times (before treatment 2.9 ± 0.51, after treatment 9.6 ± 0.77) , pepsin activity was 9.3 ± 0.89 before treatment, and 12.6 ± 0.99 after treatment. Clinical and laboratory parameters with this therapy were restored much earlier.

Children became more active, vigorous, their mood improved, interest in the environment and toys appeared, appetite and sleep improved, and weight increased. The peripheral blood picture normalized faster, the daily increase in hemoglobin averaged 0.85 units.

## RESULTS OF THE STUDY

Analyzing the results of various methods of treating patients with iron deficiency anemia, we came to the conclusion that in case of mild and moderately severe forms of anemia, to restore the secretory function of the stomach and clinical and hematological parameters, it is enough acids or natural gastric juice, iron supplements.

With the introduction of prednisolone into the complex of treatment, the results of treatment were even better. Clinical and hematological changes recovered faster, the secretory function of the stomach returned to normal in most patients.

The results of observations give reason to say that the state of the secretory function of the stomach is important in the pathogenesis of the development of anemia. To improve this function of the stomach, the method of treatment is important.

## CONCLUSIONS

When prescribing therapy for patients with iron deficiency anemia, it is necessary to take into account drugs that improve the secretory function of the stomach, which increase the digestion and absorption capacity of the gastrointestinal tract. Therefore, in severe forms of anemia, in the absence of effect from other methods of treatment, include prednisolone in the complex of treatment in short courses, in small doses.

Thus, the studies carried out and their results, indicating a decrease in the secretory-enzymatic activity of the stomach in anemia, explain some aspects of the pathogenesis of the disease, in particular, the worst absorption of iron due to low acidity of the stomach, incomplete breakdown of proteins due to insufficient enzymatic activity of the stomach, which in turn leads to a violation of hematopoiesis, maintains and aggravates anemia.

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