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# IRON DEFICIENCY ANEMIA IN CHILDREN AND ITS TREATMENT

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## ABSTRACT

The prevalence of IDA in young children, according to WHO, ranges from 17.5 to 30%. The causes of iron deficiency in children are quite diverse. The effectiveness of ferrotherapy is an integral indicator of two components - the actual therapeutic effectiveness in stopping the anemic syndrome and the tolerance of a particular ferropreparation by patients. 55 sick children with IDA of 1-2 degrees aged from 1 to 3 years were examined. The main group took ferrum-lek in grape juice (FGJ) as monotherapy, the control group ferrum-lek in the form of syrup, without adding juice. The effectiveness of FGJ was confirmed by the fact that already on the 15-20th day of treatment there was a certain regression of clinical symptoms and positive shifts in the morphofunction of the erythrocyte system of sick children. The obtained results allow us to recommend FGJ as an effective and safe herbal preparation for the treatment and prevention of IDA in children over 1 year old, and the bioavailability and bioavailability of FGJ are significantly higher than that of iron preparations when taken orally.

**Keywords:** iron deficiency anemia, children, ferrum-lek grape juice.

## INTRODUCTION

Relevance of the topic. Iron deficiency anemia (IDA) is one of the common forms of clinical pathology, occurring in every 5th inhabitant of the planet. The prevalence of IDA in young children, according to WHO, ranges from 17.5 to 30% [1]. The causes of iron deficiency in children are quite varied and are associated with both insufficient iron intake and its increased consumption in the body. The main role is played by an unbalanced diet of the child with a limitation of meat dishes and excessive consumption of dairy and flour products. An important place among the causes of IDA is occupied by impaired transplacental passage of iron, which is observed in complicated pregnancies, multiple pregnancies, and in children born prematurely [1].

## MATERIALS AND METHODS

The effectiveness of ferrotherapy is an integral indicator of two components - the therapeutic effectiveness in stopping the anemic syndrome and the tolerance of a particular ferropreparation by patients. Practice shows that when minimal signs of intolerance appear, the patient, as a rule, refuses treatment with this drug. At the same time, both of these components that determine the effectiveness of ferrotherapy, in turn, are determined by a number of factors, namely, the ionic form of the active principle of iron, the dose of elemental iron contained in a particular drug, as well as its composition, i.e. a combination of iron with components that promote better digestibility, absorption of iron in the gastrointestinal tract [3]. Given the important role of the trace element iron in the vital functions of the body, as

well as a wide range of consequences of its deficiency, the problem of IDA therapy remains relevant. The aim of our study is to replenish iron deficiency in children with IDA with the most effective, convenient and well-tolerated therapeutic agent to eliminate the consequences of this disease. At the Children's Multidisciplinary Medical Center in Samarkand, 55 sick children with IDA of 1-2 degrees aged from 1 year to 3 years were examined and treated. IDA was determined on the basis of clinical and hematological manifestations. Of the examined children, 35 patients were children of the main group: 15 patients with IDA of 1 degree and 20 patients with IDA of 2 degrees, who received the ferrum-lek syrup in grape juice (FGJ) proposed by us as monotherapy. The control group included 20 patients (10 with I degree and 10 with II degree of anemia), who, along with complex therapy, received ferrum-lek in the form of syrup, without the addition of juice.

## RESULTS AND DISCUSSION

The children of the main group were prescribed the ferrum-lek syrup in grape juice (FGJ) proposed by us as monotherapy, its daily dose for mild IDA in children over 1 year old was 60 ml, for moderate IDA - 90 ml. In this case, patients received from 50 to 55 mg of pure iron per day. During the course of therapy, the child received from 2200 to 2500 mg of iron.

In this case, the dose of the drug was adjusted based on the fact that grape juice, being a healing substance, has a diuretic and mild laxative effect. In 100 ml of grape juice, the concentration of iron fluctuates between 1 and 2 mg% and it has a beneficial effect in the treatment of anemia, metabolic disorders and other diseases.

According to our results, FGJ does not cause any side effects, which indicate good tolerability of FGJ and its clinical effectiveness in the treatment of IDA of I and II degrees. The duration of treatment was determined by the time of disappearance of clinical symptoms and normalization of peripheral erythron indices, which averaged 2.5-3 months. The effectiveness of FGJ was confirmed by the fact that already on the 15-20th day of treatment there was a certain regression of clinical symptoms and positive shifts in the morphofunction of the erythrocyte system of sick children. The results of studies of 35 children using FGJ showed that a positive clinical and hematological effect, characterized by an improvement in the general condition, appetite, pinkness of the skin, the disappearance of tachycardia and systolic murmur, positive changes in the number of erythrocytes in their morphostructure, occurred on the 15-20th day of treatment in 23 (76.6%) patients. When assessing the clinical effectiveness of treatment, attention was paid to the dynamics of changes in the well-being of patients: the emotional status of the child, the color of the skin and mucous membranes, muscle tone, the presence of dyspeptic phenomena, their constancy, etc. were taken into account. At the same time, no intolerance to FGJ was noted, which on the first day of administration was given in a slightly smaller dose (depending on age and individual characteristics) with an increase in 2-3 days to 50-60 ml. It should be noted that for most children (94.2%) this period was quite sufficient to fully adapt to the taste properties of FGJ. As our observations showed, FGJ was well tolerated by children, without causing an increase in the dyspeptic phenomena present in some patients.

The observed patients had skin color changes depending on the duration and severity of the disease. In most cases, patients had pallor, sometimes with a pale cyanotic tint of the skin and

mucous membranes. If we take into account the total before treatment, pallor of the skin was noted in 77.48% and 91.44% in the control group, respectively, at the end of the complex treatment, most children in both the main and control groups showed restoration of skin color, but in the main group it occurred 2-3 days earlier than in the control group. One of the important indicators of treatment effectiveness and nutritional adequacy of a sick child is weight gain. This indicator is an important criterion characterizing the biological properties of the test product to justify its use in children with IDA. The clinical effectiveness of any antianemic iron-containing drug is assessed by the dynamics of the increase in the level of total hemoglobin in the blood over a fixed period of time.

Inclusion of ferrum-lek in syrup together with grape juice in the arsenal of complex therapy developing against the background of IDA I and II degrees has a high efficiency for normalizing sideropenia. Complete normalization of ferritin status occurs in 2.5-3 months of treatment, the index of biological availability of iron syrup diluted in grape juice is 1.5 times higher than without dilution.

## CONCLUSION

Complete normalization of ferritin status occurs within 2.5-3 months of treatment, which indicates the feasibility of long-term ferrotherapy, especially IDA I and II degrees. An important feature of FGJ is good tolerability, high availability and absence of side effects. The obtained results allow us to recommend FGJ as an effective and safe herbal preparation for the treatment and prevention of IDA in children over 1 year old, and the bioavailability and bioavailability of FGJ are significantly higher than those of iron preparations when taken orally. Thus, the complex therapy of IDA in children over 1 year old, the drug FGJ is a highly effective, easy-to-use and well-tolerated therapeutic agent that can be recommended for the correction of sideropenia at home in children of any age group.

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