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ИЗМЕНЕНИЕ СЕКРЕТОРНО - ФЕРМЕНТАТИВНОЙ ФУНКЦИЯ ЖЕЛУДКА У ДЕТЕЙ РАННЕГО ВОЗРАСТА В ЗАВИСИМОСТИ ОТ СТЕПЕНИ ТЯЖЕСТИ АНЕМИИ

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АННОТАЦИЯ

Нами обследовано 40 детей раннего возраста больных железодефицитной анемией. Все больные были распределены по возрасту и степени тяжести анемии. Показатели желудочного содержимого у больных в зависимости от возраста показало, что более глубокие изменения наблюдались у детей возрасте от 1 до 3 лет. После проведенного лечения эти показатели у всех больных улучшились, но при тяжелых анемиях восстановление секреторно-ферментативной функции желудка идет медленнее и к моменту выздоровления часто не достигает нормы.

Ключевые слова: анемия, секреторно-ферментативная функция, дети раннего возраста.

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ERTA YOSHDAGI BOLALARDA ANEMIYA DARAJASIGA MOS OSHQAZONING SEKRETOR-FERMENTATIV FAOLIYATIDAGI O`ZGARISHLAR

ANNOTATSIYA

Biz 40 nafar temir tanqisligi anemiya bilan og'rigan erta yoshdagi bolalarni o'rgandik. Barcha bemorlar yoshi va anemiyaning og'irligiga qarab bo'lindi. Yoshga qarab bemorlarda oshqozon tarkibining ko'rsatkichlari 1 yoshdan 3 yoshgacha bo'lgan bolalarda chuqurroq o'zgarishlar kuzatilganligini ko'rsatdi. Davolanishdan so'ng barcha bemorlarda bu ko'rsatkichlar yaxshilandi, ammo og'ir anemiyada oshqozonning sekretor-enzimatik funktsiyasining tiklanishi sekinroq va ko'pincha tiklanish vaqtida normaga etib bormaydi.

Kalit so'zlar: anemiya, sekretor-enzimatikfunktsiya, ertayoshdagibolalar.

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CHANGES IN THE SECRETORY-ENZYMATIC FUNCTION OF THE GASTRIC IN INFANT CHILDREN DEPENDING ON THE SEVERITY OF ANEMIA

ANNOTATION

We examined 40 young children with iron deficiency anemia. All patients were divided according to age and severity of anemia. Indicators of gastric contents in patients depending on age showed that more profound changes were observed in children aged 1 to 3 years. After the treatment, these indicators improved in all patients, but in severe anemia, the recovery of the secretory-enzymatic function of the stomach is slower and often does not reach the norm by the time of recovery.

Keywords: anemia, secretory-enzymatic function, children of early age.

Relevance. Iron deficiency anemia is an urgent public health problem, as it is the most common pathology among children. The secretory-enzymatic function of the stomach of young children with iron deficiency anemia is a poorly studied area [1,3,5]. In an anemic state, all organs and systems of the child's body are involved in the pathological process. A pronounced relationship was noted in anemia between the hematopoietic organs and the gastrointestinal tract[2,7].The presence of hypoxia in anemia, disorders of redox processes cannot but affect the secretory-enzymatic function of the stomach, at the same time, factors contributing to the development of anemia in young children - unfavorable endogenous moments, feeding defects, malnutrition, rickets - are themselves accompanied by a decrease in secretory function of the stomach[4,6].

Purpose of the study. To study changes in the secretory-enzymatic function of the stomach in young children with iron deficiency anemia.

Material and research methods. 40 young children with iron deficiency anemia, who were treated in the 1st city hospital from 2016-2022, were examined. The distribution of patients was carried out according to age and severity of anemia. The patients were divided into 2 groups: the 1st group included children aged 3 months to 1 year with mild anemia 6 (15%), with moderate anemia 7 (17.5%); in the 2nd group from 1 to 3 years with mild anemia 9 (22.5%), with moderate 8 (20%) and severe 10 (25%) children; the control group consisted of 33 practically healthy children, aged from 6 months to 3 years. There were 36.2% of children under one year old, 47.6% aged 1 to 2 years, 16.2% aged 2 to 3 years. There were 24 boys (60%) and 16 girls (40%).All patients underwent studies of clinical and hematological data and secretory-enzymatic function of the stomach. The study of gastric juice was carried out using a thin gastric tube with an inner diameter of 2-3 mm, a length of 1-1.5 meters with a nasogastric or orogastric route of administration. The studies were conducted with parental consent.

The results obtained and their discussion. In children with anemia, before treatment on an empty stomach, it was possible to obtain gastric juice in 22 cases out of 40 (55%), while in the control group, gastric juice was obtained in 19 out of 33 (57.57%). After the treatment, gastric juice was obtained in 31.4% of patients. Indicators of gastric secretion on an empty stomach in healthy children and patients with anemia are presented in

These indicators indicated that in patients with anemia, the amount of debit gastric juice was 1.5 times reduced compared to the norm (Table 1). In addition to inhibition of gastric secretion, there was a change in the composition of gastric juice, a decrease in total acidity, a decrease in free hydrochloric acid by 3 times, its absence was observed in 80% of patients. After treatment, there was an improvement in gastric juice, the acidity of gastric juice was even slightly increased compared to healthy children, which, in all likelihood, is associated with the intake of natural gastric juice or hydrochloric acid solution by patients.

The study of the secretory-enzymatic function of the stomach in patients with anemia after a test breakfast revealed higher rates than on an empty stomach (Table 2). But the latter remain low compared to the data in healthy children, the significance of the decrease is $P < 0.001$. Gastric juice was obtained from all children. Before treatment, patients with anemia showed a decrease in the amount of gastric juice compared to healthy children, a decrease in total acidity by 2 times, free hydrochloric acid by 4 times, the pH of gastric contents was more alkaline (4.7 ± 016 at a rate of $2.93 \pm 0, 06$), the amount of total chlorine and the activity of pepsin were reduced by 2 times.

After treatment, there was an improvement in the secretory-enzymatic function of the stomach in patients with anemia: the amount of gastric juice increased, in most children normalization of total acidity, free hydrochloric acid, total chlorine and pepsin activity was observed, the range of fluctuations in gastric contents was wider. Indicators of the secretory-enzymatic function of the stomach in healthy children and the entire group of patients with anemia after giving a trial breakfast P1 - before anemia treatment and in healthy children, P2 - before and after anemia treatment.

The distribution of patients by age and severity of anemia are presented in Table 3. Patients aged 3 months to 1 year with mild anemia 6 (15%), with moderate 7 (17.5%); from 1 to 3 years with mild anemia 9 (22.5%), with moderate 8 (20%) and severe 10 (25%) children.

In the 1st group of patients with mild anemia, gastric juice on an empty stomach was obtained only in three, the amount of gastric juice ranged from 1 to 3 ml, pH - from 4 to 6, total acidity from 10 to 20 titer. units, free hydrochloric acid from 0 to 5 titr.un., and in the 2nd group of patients with mild iron deficiency anemia, it was obtained in 8 out of 34 examined, the amount of gastric juice averaged 2.2 ± 0.32 ml, pH gastric juice - 5.3±0.53, total acidity averaged 13.2±2.27 titr units, free hydrochloric acid was absent in 6 out of 8 patients. So, in patients under the age of one year after treatment with a mild degree of anemia, gastric juice was extracted from 6, its amount ranged from 1 to 10 ml, which averaged 4.0 ± 1.08 ml, i.e. twice as much as before treatment, the pH of gastric juice ranged from 4 to 5, averaged 4.8±0.16, total acidity ranged from 10 to 24 titr.un., averaged 14.0±0, 75 titr.u., free hydrochloric acid ranged from 0 to 10 titr.u., averaged 4.5 ± 3.60 titr.u., and in children with mild anemia aged 1 to 3 years at the end of inpatient treatment, gastric juice on an empty stomach was obtained in 12 out of 34 examined. The volume of gastric juice increased to an average of 5.1±1.94 ml, the pH of gastric juice became more acidic, averaging 4.2±0.35, the total acidity increased, fluctuating more from 7.5 to 30 titers. units, averaged 17.5±2.32 titers. units, free hydrochloric acid averaged 5.2±1.12 titer.units.

The secretory function of the stomach on an empty stomach before treatment in the 1st group with moderate iron deficiency anemia was more depressed. So, in patients under the age of one year, gastric juice on an empty stomach was extracted only in two of 17 subjects, its amount ranged from 1 to 3 ml, pH - from 5 to 6, total acidity - from 10 to 12 titers. units, free hydrochloric acid - from 0 to 2 titr. units In children in the 2nd group, gastric juice was obtained on an empty stomach in 6 out of 22 patients, and the amount of gastric secretion averaged 2.25±0.35 ml, the pH of gastric juice ranged from 4 to 7, on average it was 5.8±0 47, the total acidity ranged from 5 to 16 titrs. units, which averaged 10.6±1.49 titers. units, free hydrochloric acid was absent in all patients. After complex treatment, the secretory function of the stomach on an empty stomach improved in all.

In children under the age of one year, the amount of gastric juice ranged from 2 to 5 ml, pH from 4 to 5, total acidity from 15 to 30 titers. units, free hydrochloric acid from 4 to 10 titr. units In children aged 1 to 3 years, the amount of gastric juice averaged 3.9 ± 0.93 ml, the pH of gastric juice became more acidic, on average 4.6 ± 0.45, the total acidity increased 1.5 times and averaged 17.0±2.7 titer. units, free hydrochloric acid averaged 4.3±1.59 titer.units. With a severe degree of iron deficiency anemia, gastric juice on an empty stomach was obtained in 5 out of 14 patients. The amount of gastric juice averaged 3.0 ± 0.48 ml, the pH of gastric juice was alkaline, averaging 6.0 ± 0.25, the total acidity ranged from 5 to 20 titr.ed. and averaged 12.2±2.54 titer. units, free hydrochloric acid was absent in all patients. After the treatment, the parameters of the secretory function of the stomach on an empty stomach improved. The amount of gastric juice averaged 5.0±1.31 ml, pH - 5.5±0.42, total acidity - 15.4±2.35 titer. units, free hydrochloric acid ranged from 0 to 6 titers. units.

In patients with mild iron deficiency anemia, after a trial breakfast, all indicators of gastric contents (total acidity, free hydrochloric acid, total chlorine and pepsin activity) were reduced compared to the norm ($P < 0.001$). Individual indicators indicated that in patients of the 1st group, total acidity was reduced in 66.6%, free hydrochloric acid in 38.8%, and was absent in 38.8% of patients, total chlorine was reduced in 57% and pepsin activity - in 38.8% of cases. In the 2nd group, total acidity was reduced in 82.3%, free hydrochloric acid in 55.8% and was absent in 29.4% of children, total chlorine was reduced in 71.4% and pepsin activity in 73.5% of patients.

Individual studies revealed that gastric juice indices were significantly reduced in older patients. After treatment, all patients showed an improvement in clinical and hematological data and secretory-enzymatic function of the stomach, free hydrochloric acid was found in all patients, normalization occurred faster in children under one year old (72.3%) than in older children (41.2%).Indicators of the secretory-enzymatic function of the stomach in patients with moderate anemia were significantly reduced.

In children under the age of one year, total acidity was reduced in 88%, free hydrochloric acid in 35.3% and was absent in 47% of patients,

as for total chlorine, it was reduced in 50% and pepsin activity in 58.8% of patients, and in children of the second group, total acidity was low in all patients (100%), free hydrochloric acid in 36.4% and absent in 63.6% of patients, total chlorine was reduced in 90% and pepsin activity in 90.9% examined patients. After the treatment, all indicators of gastric contents in patients with moderate anemia improved. In children under the age of one year, total acidity and free hydrochloric acid returned to normal in 76.5% of patients; at the age of 1 to 3 years, the total acidity returned to normal in 36.4%, free hydrochloric acid was found in all patients, it returned to normal in 31.9% of cases, and in the remaining patients it did not reach normal numbers. Clinical and hematological data recovered in all patients.

After a trial breakfast, the indicators of the secretory-enzymatic function of the stomach in patients with severe anemia were sharply reduced compared to patients with mild and moderate anemia. The gastric volume in patients before treatment was greater compared to the volume in patients with mild to moderate anemia, which increase was mainly due to mucus. pHgastric juice was more alkaline, total acidity was reduced in all patients (100%), free hydrochloric acid in 28.5% and absent in 71.5%, total chlorine of gastric contents was reduced in all patients (100%) and pepsin activity in 92.8% of patients. After treatment, these indicators improved significantly, but more often did not reach the indicators of healthy children. In severe anemia, the recovery of the secretory-enzymatic function of the stomach is slower.

Conclusions. Thus, the results of our studies have shown that in patients with iron deficiency anemia, the secretory-enzymatic function of the stomach decreases in proportion to the increase in the severity of anemia: the more severe the anemia, the more suppressed the secretory-enzymatic function of the stomach.

Indicators of gastric contents in patients depending on age showed that more profound changes were observed in children aged 1 to 3 years. After the treatment, these indicators improved in all patients, but in severe anemia, the recovery of the secretory-enzymatic function of the stomach is slower and often does not reach the norm by the time of recovery.

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