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FEATURES OF THE CLINICAL COURSE AND LABORATORY STUDIES OF NON–Ig E -MEDIATED ALLERGIC REACTION WITH FOOD PROTEIN-INDUCED ENTEROCOLITIS SYNDROME

Nabieva Diyora Mirkhamzaevna[1]

[1] assistant of the 1st pediatrics and neonatology department

Samarkand State Medical University. Samarkand, Uzbekistan

Abstract: In daily pediatric practice, there is a significant increase in food allergies, which is becoming a serious problem in pediatrics and is still poorly recognized. Studies show that allergic reactions in the gastrointestinal tract occur in 30-50% of children with allergies to cow's milk proteins, which are of a non-IgE-mediated type. Therefore, the purpose of our study is the clinical course and features of laboratory parameters of a non-IgE-mediated allergic reaction to food proteins with enterocolitis syndrome in young children of the gastroenterological department of the Samarkand regional Children's Multidisciplinary Medical Center. This review will focus on clinical signs and laboratory studies such as: coprological examination, enzyme immunoassay (ELISA), and general blood analysis of acute and chronic non-IgE-mediated allergic reactions with enterocolitis syndrome. The study involved 50 patients, then the patients were divided into 2 groups: In group I (n=25), the clinical course and laboratory characteristics of acute non–IgE-mediated gastrointestinal allergic reaction to food, with a duration of up to 1 month from the onset of the disease, were described. A characteristic feature of this syndrome is loose stools with an admixture of large amounts of mucus, flatulence, and profuse vomiting. It is manifested in the laboratory by eosinophilia. In group II (n=25), a chronic course of allergic enterocolitis with a duration of up to 3 months with clinical and laboratory signs characterized by moderate to severe anemia and leukocytosis was described. At the same time, it should be noted that in acute and chronic cases, the result of allergy testing is enzyme immunoassay (sIgE) negative.

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Key words: Food allergy, non-IgE-mediated type, cow's milk proteins, clinical course, enterocolitis syndrome.

ОСОБЕННОСТИ КЛИНИЧЕСКОГО ТЕЧЕНИЯ И ЛАБОРАТОРНЫХ ИССЛЕДОВАНИЙ НЕ Ig E – ОПОСРЕДОВАННОЙ АЛЛЕРГИЧЕСКОЙ РЕАКЦИИ С СИНДРОМОМ ЭНТЕРОКОЛИТА, ВЫЗВАННАЯ ПИЩЕВЫМИ БЕЛКАМИ У ДЕТЕЙ

***Набиева Диёра Мирхамзаевна*[1]**

[1] ассистент кафедры 1-педиатрии и неонатологии, Самаркандский Государственный медицинский университет

Самарканд, Узбекистан

Аннотация: В повседневной педиатрической практике наблюдается значительный рост пищевой аллергии, что становится серьезной проблемой в педиатрии и по прежнему остаются плохо распознаваемыми. Исследования показывают, что аллергические реакции в желудочно-кишечном тракте отмечаются у 30-50% детей с аллергией на белки коровьего молока, которые протекают по не IgE-опосредованному типу. Следовательно, целью нашего исследования являются клиническое течение и особенности лабораторных показателей не IgE-опосредованной аллергической реакции на пищевые белки с синдромом энтероколита у детей младшего возраста гастроэнтерологического отделения Самаркандского областного детского многопрофильного медицинского центра. В этом обзоре будут посвящены клинические признаки и лабораторные исследования такие как: копрологическое исследование, иммуноферментный анализ (ИФА) и общий анализ крови острой и хронической не IgE-опосредованной аллергической реакции с синдромом энтероколита. В исследовании приняли участие 50 больных, далее пациенты были разделены на 2 группы: В I группе – (n=25) описаны клиническое течение и особенности

лабораторных показателей острой не IgE-опосредованной гастроинтестинальной аллергической реакции на пищу, с продолжительностью до 1 месяца от начала заболевания. Для данного синдрома характерным признаком является жидкий стул с примесью большого количества слизи, метеоризм, обильная рвота. Лабораторно проявляется эозинофилией. Во II группе (n=25) описаны хроническое течение аллергического энтероколита с продолжительностью до 3 месяцев с клиническими и лабораторными признаками для которого характерны анемия средне - тяжелой и тяжелой степени и лейкоцитоз. При этом нужно отметить что при остром и хроническом течениях результат аллергообследования иммуноферментный анализ (sIgE) отрицательный.

Ключевые слова: Пищевая аллергия, не IgE-опосредованный тип, белки коровьего молока, клиническое течение, синдром энтероколита.

BOLALARDA OZIQ-OVQAT OQSILLARI SABAB BO'LGAN ENTEROKOLIT SINDROMI BILAN KO'RSATILGAN ALLERGI REAKSIYA - IG E BO'LMAGAN KLINIK KECHISHI VA LABORATORIYA TADQIQOTLARI XUSUSIYATLARI

Nabieva Diyora Mirhamzaevna[1]

[1] 1-son pediatriya va neonatologiya kafedrasi assistenti, Samarqand davlat tibbiyot universiteti. Samarqand, O‘zbekiston

Annotasiya: Kundalik pediatriya amaliyotida oziq-ovqat allergiyasining sezilarli darajada ko'payishi kuzatiladi, bu pediatriyada jiddiy muammoga aylanadi va hali ham yomon tan olinadi. Tadqiqotlar shuni ko'rsatadiki, oshqozon-ichak traktidagi allergik reaktsiyalar IgE vositachiligida bo'lmagan sigir suti oqsillariga alergiyasi bo'lgan bolalarning 30-50 foizida kuzatiladi. Binobarin, tadqiqotimizning maqsadi Samarqand viloyati bolalar ko'p tarmoqli tibbiyot markazi gastroenterologiya bo'limining yosh bolalaridagi enterokolit sindromi bilan oziq-ovqat oqsillariga IgE

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vositachiligidagi allergik reaktsiyaning klinik kechishi va laboratoriya ko'rsatkichlarining o'ziga xos xususiyatlari hisoblanadi. Ushbu sharh klinik belgilar va laboratoriya tadqiqotlari kabi: koprologik tekshiruv, ferment bilan bog'liq immunofent tahlil (Elishay) va enterokolit sindromi bilan o'tkir va surunkali IgE vositachiligidagi allergik reaktsiyaning umumiy qon tahlili. Tadqiqotda 50 bemor ishtirok etdi, keyin bemorlar 2 guruhga bo'lindi: I guruh – (n 25) kasallikning boshlanishidan 1 oygacha davom etadigan oziq-ovqatga IgE vositachiligidagi gastrointestinal allergik reaktsiyaning o'tkir klinik kechishi va laboratoriya ko'rsatkichlarining xususiyatlarini tavsiflaydi. Ushbu sindrom uchun xarakterli belgi ko'p miqdordagi shilimshiq suyuq najasdir, meteorizm va ko'p miqdorda qusish. Laborator tekshiruvida eozinofiliya bilan namoyon bo'ladi. II guruhda (n 25) klinik va laboratoriya belgilari bilan 3 oygacha davom etadigan allergik enterokolitning surunkali kechishi tasvirlangan, bu o'rtacha og'ir va og'ir anemiya va leykotsitoz bilan tavsiflanadi. Shuni ta'kidlash kerakki, o'tkir va surunkali kechishi allergiya tekshiruvi natijasida ferment bilan bog'liq immunosorbent tahlil (sIgE) salbiy hisoblanadi.

Kalit so'zlar: Oziq-ovqat allergiyasi, IgE vositachiligida bo'lmagan tur, sigir suti oqsillari, klinik kechishi, enterokolit sindromi.

Relevance: Complaints of gastrointestinal (GI) disorders often lead to medical treatment in pediatrics and diagnosis can be difficult due to the wide range of potential underlying causes. Moreover, food allergies, especially in the early years of life, account for a significant proportion of diseases of the gastrointestinal tract. By definition, a food allergy is a pathological reaction to food components that is based on immune mechanisms. As a rule, food allergies from the gastrointestinal tract are classified with their underlying pathogenesis. In IgE-mediated food allergies, symptoms develop rapidly immediately after ingestion of the trigger food that causes the allergic reaction. They are most often accompanied by other symptoms affecting the skin and mucous membranes. In some cases, mixed-type reactions may occur, which trigger complex immunological mechanisms that are only partially related to

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IgE. At the other end of the spectrum is a non-IgE-mediated gastrointestinal allergic reaction to food, and they are especially difficult to diagnose, in which there are no circulating food-specific IGES and concomitant gastrointestinal symptoms usually slow down after eating food and may have a chronic course. Non-IgE-mediated gastrointestinal allergic reaction to food consists of three main forms: Food protein–induced enterocolitis syndrome (FPIES), Food protein enteropathy (FPE), and Food protein- induced allergic proctocolitis (FPIAP).

The aim of the study. Was to evaluate the clinical course and laboratory characteristics of acute and chronic non-IgE-mediated allergic reactions caused by dietary proteins, occurring with enterocolitis syndrome in children.

Materials and methods of research. To achieve this goal, the results of laboratory data and the clinical course of the disease of children from the department of gastroenterology of the Samarkand Regional Children's Multidisciplinary Medical Center aged 1 to 3 years were analyzed. A clinical examination was conducted with the collection of medical history and complaints from the parents of the patients. In all children, this pathology manifests itself acutely and chronically, depending on the frequency of ingestion of the food allergen and the individual characteristics of the body in children. In this age group, the main cause of diseases is the inclusion in the diet of products containing cow's milk proteins (BCM), products containing soy and egg proteins. 50 patients participated in the study.

The patients were divided into 2 groups: Group I (n=25) acute non-IgE-mediated gastrointestinal allergic reaction with enterocolitis syndrome, in which a characteristic feature of the clinical picture is profuse and repeated vomiting (in >50% of patients) that occurs 1-4 hours after eating. Diarrhea that occurs after 5-10 hours (in 55-95%). Flatulence (in >90%) Symptoms can be quite severe, and up to 15% of patients experience hemodynamic instability. Group II (n=25) the chronic course of a non-IgE-mediated gastrointestinal allergic reaction with enterocolitis syndrome to food is manifested by chronic watery diarrhea (with an admixture of mucus in severe cases of

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blood), periodic vomiting, bloating, moreover, insufficient weight gain. In a subgroup of patients, symptoms gradually worsen and can lead to dehydration (in 15-45%) and metabolic disorders (in 5%). As a rule, a chronic non-Ig-E-mediated reaction occurs with the constant consumption of cow's milk or chicken eggs.

The results of the study. To assess the effectiveness of the conducted examination, anamnestic data and laboratory data were collected such as: enzyme immunoassay (ELISA), general blood test and coprological examination.

From the anamnestic data collected from the parents of 25 group I patients with acute non-Ig-E-associated allergic reaction with enterocolitis syndrome, the complaints were as follows: epigastric pain (in 78%), flatulence (in 96%), diarrhea (in 98%) (liquid mucous stools). Stool type: liquid with an admixture of a large amount of mucus, with a pungent odor and a greenish tinge. Stool 5 to 14 times a day with a systemic inflammatory response. Complaints include symptoms directly from the gastrointestinal tract without affecting the integrity of the skin and mucous membrane. Laboratory data: There is eosiophilia in the general blood test. When conducting enzyme immunoassay (ELISA), sIgE is negative. At the same time, there is no delay in mass-growth indicators.

Complaints of group II parents with a chronic course of allergic enterocolitis are manifested by chronic watery diarrhea (with an admixture of mucus, in severe cases blood), periodic vomiting, bloating and insufficient weight gain. In a subgroup of patients, symptoms gradually worsen and can lead to dehydration (in 30-45%) and metabolic disorders (in 5-7%).

Table 1. Anamnestic data on complaints from parents of groups I and II (50 patients) who are both acutely and chronically treated at the Department of Gastroenterology of the Samarkand Regional Children's Multidisciplinary Center, which is the clinical base of the 1 pediatrics and neonatology department.

Table 1

Comparative features of clinical signs at the admission of patients.

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	Stool frequency	Color indicator	Smell	Duration of the disease	Mucus	Blood
Severe course: non-IgE-mediated allergic reaction with enterocolitis syndrome caused by dietary proteins	From 5 to 14 times a day	Greenish tint	Cutting	From the onset of the disease to 1 month	In large numbers	Absent
Chronic course: non-IgE-mediated allergic reaction with enterocolitis syndrome caused by dietary proteins	From 2 to 7 times a day	Dark green or brown	Sour	From 1 to 3 months	In significant numbers	Sometimes

In young children (from 6 months to 1 year), chronic non-IgE-mediated allergic enterocolitis is most often caused by hypersensitivity to cow's milk proteins (BCM) (possibly combined with allergies to soy, egg, wheat and other products) and is characterized by prolonged diarrhea, vomiting, insufficient body weight gain, anemia and hypoproteinemia.

Table 2. Laboratory data and clinical signs of Food protein induced enterocolitis syndrome (FPIES)

Table 2

Food protein induced enterocolitis syndrome

Age	From 1 to 3 years

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The most common allergens	There are often several allergens: Cow's milk proteins, chicken eggs, soy; Chicken, fish — for older children
Clinical picture: In the acute course	Progressive diarrhea with the presence of mucus. Intermittent vomiting. No delay in mass-growth indicators Epigastric pain. Flatulence.
With a chronic course	Pallor of the skin. Enteropathy with protein loss Delayed weight gain Lethargy. Flatulence.
Laboratory data (blood)	Anemia Eosinophilia Hypoalbuminemia
Laboratory data (stool)	White blood cells Mucus Neutral fat Muscle fibers Fatty acids. Soap and starch - a small amount

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The result of the allergy survey: Enzyme immunoassay (ELISA)	sIgE - negative

As a rule, chronic non-IgE-mediated allergic reactions with enterocolitis syndrome occur in children over 1 year of age. In this age group, the vast majority of cases are caused by the introduction of foods containing CMP into the diet. With the constant use of cow's milk or soy-based milk formulas, there is also the presence of chicken eggs in the child's diet. The defining feature of chronic non-IgE-mediated allergic reactions is the recurrence of symptoms that become acute when food is reintroduced after the withdrawal period (the phenotype of the transition from acute to chronic) **Conclusions:** Thus, in young children, a non-IgE-mediated allergic reaction with enterocolitis syndrome caused by dietary proteins causes various symptoms. It is most often caused by hypersensitivity to cow's milk proteins (its combination with allergies to soy, egg proteins and other products) and is characterized by prolonged diarrhea, vomiting, insufficient body weight gain, iron deficiency anemia, hypoproteinemia. Due to the lack of available information, there are no clear evidence-based diagnostic and treatment protocols. At the moment, the diagnosis is based on clinical observations, although diagnostic criteria continue to evolve to better account for the diversity of these diseases as our understanding deepens.

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