



## COMPARATIVE ANALYSIS OF THE PROBLEMS OF ACUTE INTESTINAL INFECTIONS IN YOUNG CHILDREN IN THE SECTION OF YEARS OF THE SAMARKAND REGION

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### Abstract

In the Republic of Uzbekistan, one of the types of infectious diseases that pose a serious threat to the health of young children, especially in children under 1 year old, have been and remain acute infectious intestinal infections that occur at this age. The negative impact of acute intestinal infection on the disruption of normal homeostasis and the development of anatomical and physiological activity of the body, which is an important stage for immunity and intestinal microflora in the first weeks of life, has been well studied. It has been shown that acute intestinal infection occurs in 80–85% of cases in young children and up to 60–70% of deaths in children under one year of age. The purpose of the study: a comparative analysis of acute intestinal infections in children under 1-year-old in the Samarkand region for 2004-2014. The material for the study was the anamnesis of patients treated at the Samarkand Regional Clinical Infectious Diseases Hospital from 2004 to 2014. The dynamics of these patients was statistically analyzed retrospectively. Analysis of statistics of patients under one year of age who were treated with a diagnosis of "Acute intestinal infection" in the Samarkand Regional Clinical Infectious Diseases Hospital in 2004-2014. Studies have shown that the incidence of acute intestinal diseases in children under one year old is 48,05%. Analysis of the incidence of acute intestinal infections by years shows that the incidence of acute intestinal infections in young children remains mainly seasonal. The results of a comparative analysis of the causes of AII in 2004-2014. showed that in the Samarkand region 48,05% of acute intestinal infections occur in children under one-year-old, and among young children, the disease is seasonal. An increase in the number of cases of acute intestinal infections in young children was revealed with an increase in air temperature (56%).

**Keywords:** Acute intestinal infections, climate, children, seasonality





## СРАВНИТЕЛЬНЫЙ АНАЛИЗ ПРОБЛЕМЫ ОСТРОЙ КИШЕЧНОЙ ИНФЕКЦИИ У ДЕТЕЙ РАННЕГО ВОЗРАСТА В РАЗРЕЗЕ ГОДОВ ПО САМАРКАНДСКОЙ ОБЛАСТИ

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Острые кишечные инфекции (ОКИ), согласно данным ВОЗ, представляют собой вторую по значимости причину смерти детей младше 5 лет. Каждый год в мире регистрируют около 1,7 млрд случаев инфекционной диареи у детей, причём погибают от этого 525 тыс. детей дошкольного возраста. В Республике Узбекистан одним из видов инфекционных заболеваний, представляющих серьезную угрозу для здоровья детей раннего возраста, особенно у детей младше 1 года, были и остаются острые инфекционные кишечные инфекции, возникающие в этом возрасте. Было показано, что острая кишечная инфекция протекает в 80–85% случаев у детей раннего возраста и до 60–70% случаев является причиной смерти у детей в возрасте до одного года. Цель исследования: сравнительный анализ острых кишечных инфекций у детей до 1 года в Самаркандской области за 2004-2014 гг. Материалом для исследования послужили истории болезни пациентов, лечившихся в Самаркандской областной клинической инфекционной больнице с 2004 по 2014 гг. Динамика этих пациентов была статистически проанализирована ретроспективно. Согласно полученных данных ретроспективного исследования больных в возрасте до одного года, лечившихся с диагнозом «Острая кишечная инфекция» в Самаркандской областной клинической инфекционной больнице в 2004-2014 гг., показали, что заболеваемость острыми кишечными заболеваниями у детей до года составляет 48,05%. Анализ заболеваемости острыми кишечными инфекциями по годам показывает, что заболеваемость острыми кишечными инфекциями у детей раннего возраста остается в основном сезонной. Результаты сравнительного анализа причин ОКИ в 2004-2014 гг. показали, что в Самаркандской области 48,05% острых кишечных инфекций приходится на детей до года, а среди детей раннего возраста заболевание носит сезонный характер. Выявлено увеличение числа случаев острых кишечных инфекций у детей раннего возраста при повышении температуры воздуха (56%).

**Ключевые слова:** Острые кишечные инфекции, климат, дети, сезонность





## Introduction

Acute intestinal infections (AII) are the second leading cause of death in children under 5 years of age, according to WHO. Every year, about 1.7 billion cases of infectious diarrhea in children are registered in the world, and 525 thousand preschool children die from this [3]. In the Republic of Uzbekistan, acute infectious intestinal infections have been and remain one of the types of infectious diseases that pose a serious threat to the health of young children, in particular children of the first year of life [1, 2].

It is known that acute intestinal infections from the first weeks of a child's life lead to disruption of normal homeostasis, which is an important stage in the formation of immunity and intestinal microflora, and also has an adverse effect on the development of the anatomical and physiological activity of the body [4,7,10].

Important in the development of acute intestinal infections is the composition of the child's own microbiota at the time of contact with the pathogen. The role of the microbiota in ensuring the stability of the intestinal mucosa during colonization by pathogenic and opportunistic microorganisms has been studied quite well. Violations of the normal intestinal microbiota are characterized by the disappearance or decrease in the number of its obligate representatives, on the one hand, and an increase in the population level of opportunistic bacteria that are absent or found in an insignificant amount in the norm, on the other.

As a result, such dysbiotic microbial associations are unable to provide the protective functions of the normobiota. It has been proven that acute intestinal infection in young children is severe in 80–85% of cases, and among children under the age of one year, it leads to death in 60–70% [6,9]. Despite the improvement of the hygienic lifestyle of the population, the number of cases of acute intestinal infections is increasing every year. Given the wide prevalence and diversity of pathogens, as well as the difficulties that arise in the diagnosis, the problem of acute intestinal infections in childhood does not lose its relevance.

The direct dependence of human health on the external environment is covered in many scientific publications. According to the observations of researchers, over the past 100 years the air temperature has risen by an average of 0,74 ° C. Climate change also affects the development of many infectious and parasitic diseases. To clarify the above data, we analyzed climate change in the Samarkand region and the number of young children treated for acute intestinal infection in the regional infectious diseases hospital by month.





## Objective of the Study

Comparative analysis of cases of acute intestinal infection in children of the first year of life in the Samarkand region for the period 2004-2014.

## Materials for Research

The material of the study was the case history of children treated in the Samarkand Regional Clinical Infectious Diseases Hospital for the period 2004-2014. A retrospective analysis of the course of the disease was carried out.

## Research Methods

anamnestic, clinical and laboratory

## Results

Discussion of the results obtained: When analyzing the age structure, it was found that among the patients of the first 3 years of life, children under the age of one year prevailed. Analysis of statistical data of patients under the age of one year who were treated with a diagnosis of "Acute intestinal infection" in the Samarkand Regional Clinical Infectious Diseases Hospital from 2004 to 2014 showed that the incidence of acute intestinal diseases in children under the age of one year is 48,05% (Figure 1).

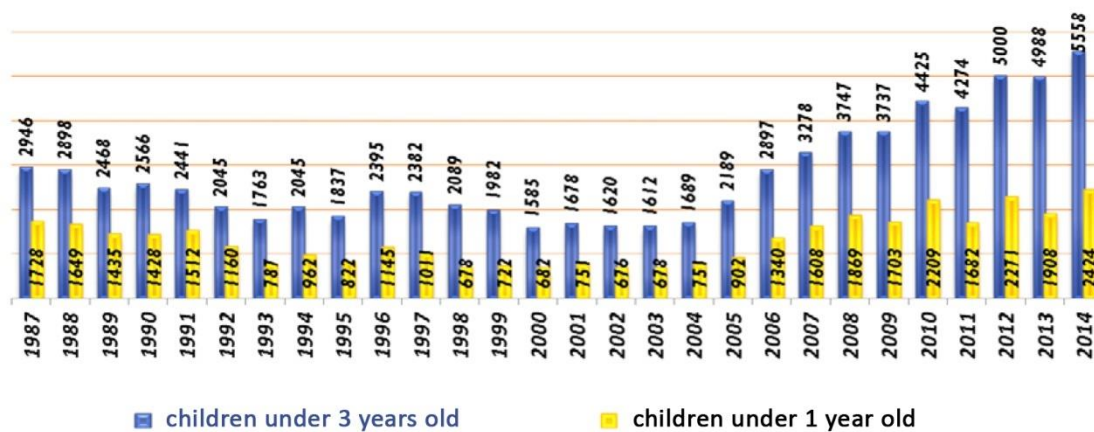


Fig.№ 1. Comparative analysis of the incidence of acute intestinal infection in children under 3 years of age in the Samarkand region

Primary microbial colonization is the most important process in the life of a child, since the emerging microbiota significantly affects the state of his body, up to a predisposition to the development of certain diseases. It is now proven that the baby receives the mother's microbiota throughout pregnancy, childbirth and breastfeeding. Breastfeeding has a significant positive impact on the formation of intestinal



microflora in children. It has been proven that in the intestinal microbiota of children with natural feeding, bifidobacteria and lactobacilli dominate, which make up 95% of the entire microbiota, a low content of aerobes is revealed, among which non-pathogenic E. Coli predominates and opportunistic enterobacteria, clostridium, bacteroids are rare.

In formula-fed infants, the gut microbiota contains fewer bifidobacteria. Bacteroids and opportunistic microflora are quite often isolated from them [3]. According to the results of our study, 25,7% of children were breastfed for up to 1 month, 29,4% for children under 1 year, and 17,6% for more than a year. 27,3% of children received milk formula from birth. In turn, the percentage of children with AEI receiving milk formula was more than 2 times higher and amounted to 68.6%, which once again proves that breast milk, in addition to nutritional value, is of great and decisive importance in the formation of normal intestinal microflora, and is also important in protecting the child from infection. It is known that immunity against enterobacteria that cause diarrheal diseases is mainly carried out by IgM. This immunoglobulin does not cross the placenta, so babies are not protected from intestinal infections. The lack of IgM is supplemented by the amount of IgG and IgA that enter the body of the infant with breast milk [4].

According to the analysis of clinical protocols for young children treated in the regional infectious diseases clinical hospital in Samarkand, the causes of the disease are as follows: 19.9% of mothers were associated with poor nutrition, 44,8% of mothers were associated with premature transfer to artificial feeding (milk, cream, cookies); 16,9% of mothers added new products to their usual diet (fruits, vegetables), and 18,4% of patients developed acute intestinal infections against the background of premorbid conditions. In 18,9% of children, the cause of the disease is unknown. The following concomitant diseases were observed in patients: anemia in 92,3%, oral candidiasis in 19,8%, malnutrition (malnutrition) in 49,2%, various types of diathesis in 14,7%, bronchopneumonia in 16.8%, acute bronchitis - in 17,6%. Statistics for the period 2004-2014 shows that the incidence of acute intestinal infections by months of the year was distributed as follows: (Figure 2).



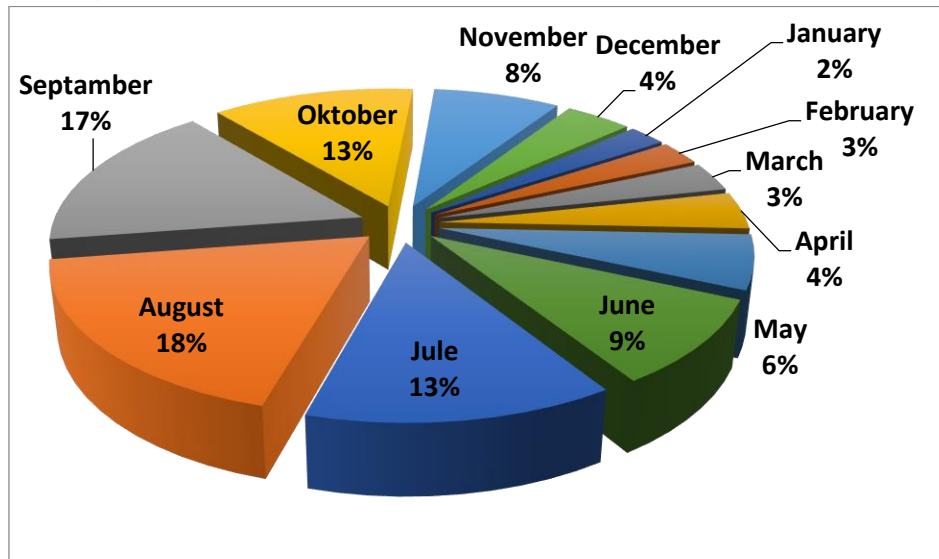


Fig.No 2. Distribution of AII cases by months of the year

When studying the time of admission of patients to the hospital in the context of months of the year, there was a direct correlation between an increase in air temperature and an increase in the number of patients. The results of the study confirmed a direct relationship between the incidence of acute intestinal infections in young children in the Samarkand region and air temperature (Figure 3).

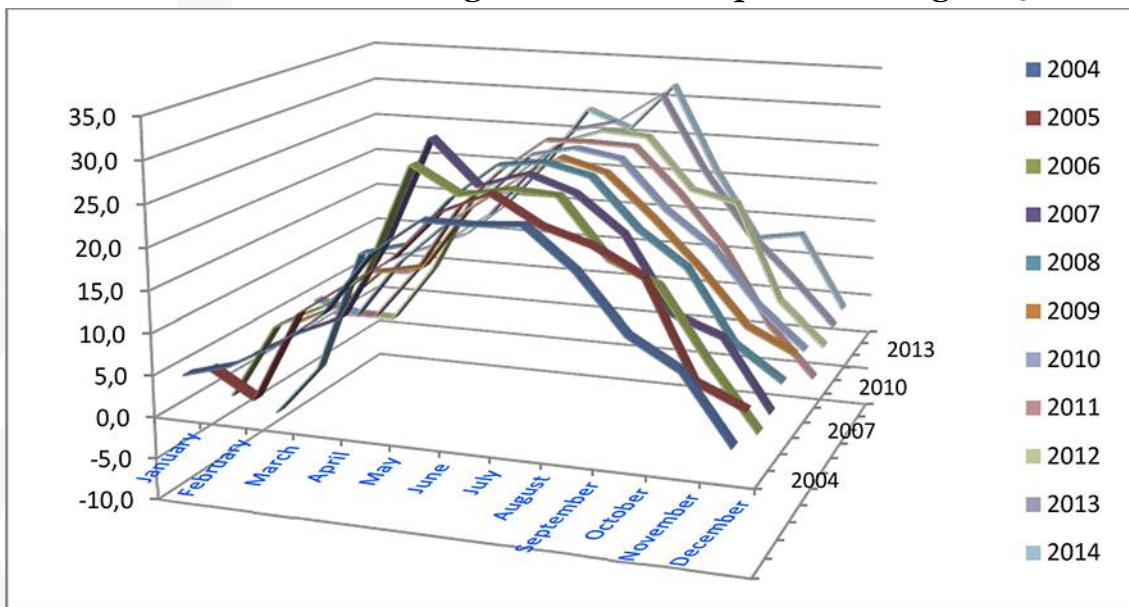


Fig.No 3. Graphic representation of the air temperature regime for the period 2004-2014.



The seasonality of the incidence of acute intestinal infections in young children is observed in June, July, August and September, respectively. This is consistent with observations in some studies [3,7,8]. Thus, an increase in the incidence of AII was observed in June, July, August, September and October, respectively, which is consistent with the data of other studies. The main reasons for the development of morbidity in patients with acute intestinal infections in September and October (13% and 8%) are associated with the chronic course and recurrence of acute intestinal infection in some children. The high frequency of severe forms and the unfavorable course of AII in children of different age groups, as well as prolonged post-infectious bacterio- and virus excretion, remain an urgent problem in practical healthcare.

### **Conclusion**

The results of a comparative analysis of the causes of AII for the period 2004-2014. Showed that in the Samarkand region 48.05% of cases of acute intestinal infections occur in children under one-year-old, and among young children the disease is seasonal. An increase in the number of cases of acute intestinal infections in young children was observed with an increase in air temperature.

### **References**

1. Vafokulova N.Kh. "Clinical and epidemiological features of norovirus infection in infants". Scientific and practical journal "Problems of Biology and Medicine", Samarkand, No. 3 2021, pp 150-156.
2. Vafokulov S.Kh., Rustamova Sh.A., Vafokulov N.Kh. "Analysis of the problems of acute intestinal infections in children born by caesarean section in the Samarkand region." Journal of Hepato-Gastroenterological Research. Quarterly scientific and practical journal No. 1 (Volume 2) 2021. pp. 16-18
3. Iskandarova, G. T. Epidemiological aspects of intestinal infections in the Tashkent region of the Republic of Uzbekistan / G. T. Iskandarova, O. N. Sharapov, D. Yu. Yusupova. // Young scientist. - 2017. - No. 1.2. - S. 57-59.
4. Mustaeva G.B., Tirkashev O.S. "Peculiarities of the clinical and epidemiological course of intestinal diseases in young children caused by opportunistic flora in the Samarkand region". Scientific and practical journal "Problems of Biology and Medicine", Samarkand, No. 4 (120) 2020, pp. 91-94.
5. Mustaeva G.B. "Features of the course of Klebsiella infection according to the data of the Samarkand Regional Clinical Hospital". Bulletin of Science and Education. 2020. No. 18 (96). Part 2.p. 81-85.





6. Rustamova Sh.A. "Analysis of the relationship of acute intestinal infections in children in the country with climate change (in Samarkand region)." *Scientific and practical journal of problems of biology and medicine*. №3 (128) 2021 pp.142-148.
7. Rustamova Sh.A. Vafakulova N.Kh., Yarmukhamedova N.A. "Mixed variants of norovirus infections in young children". *All-Ukrainian journal of students and young scientists "HIST"*, Chernivtsi, Issue 17, 2014, p.247.
8. Rustamova Sh.A., Vafokulova N.Kh. "Comparative analysis of the problems of acute intestinal infections in young children in the Samarkand region by years". *Journal of Hepato-Gastroenterological Research*. Quarterly scientific and practical journal No. 1 (Volume 2) 2021. pp. 101-104.
9. Lazar, V.; Ditu, L.M.; Pircalabioru, G.G.; Gheorghe, I.; Curutiu, C.; Holban, A.M.; Picu, A.; Petcu, L.; Chifiriuc, M.C. Aspects of Gut Microbiota and Immune System Interactions in Infectious Diseases, Immunopathology, and Cancer. *Front. Immunol.* 2018, №9 [Google Scholar] [CrossRef]
10. Png, C.W.; Lindén, S.K.; Gilshenan, K.S.; Zoetendal, E.G.; McSweeney, C.S.; Sly, L.I.; McGuckin, M.A.; Florin, T.H.J. Mucolytic bacteria with increased prevalence in IBD mucosa augment in vitro utilization of mucin by other bacteria. *Am. J. Gastroenterol.* 2010, №105 [Google Scholar] [CrossRef]
11. Von Hertzen, L.; Hanski, I.; Haahtela, T. Natural immunity. Biodiversity loss and inflammatory diseases are two global megatrends that might be related. *EMBO Rep.* 2011, №12. [Google Scholar] [CrossRef]
12. Rustamova Sh.A., Vafokulova N.Kh., Saimova Kh.A. «Impact of delivery method on intestinal microbiocenosis in newborn and prevention methods» of the South-Kazakhstan medicina academy republican scientific journal. No. 2 (96), 2022. Pp. 119-123.
13. Rustamova Sh.A. Comparative analysis of the problem of acute intestinal infection in young children by year in the Samarkand region // *Bulletin of the Tashkent Medical Academy* - 2021. - №. 5.Pp: 148-152.

