

Severe Course of Acute Intestinal Infections in Children with Cerebral Disorders

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Abstract: Acute intestinal infections remain one of the leading causes of morbidity among children worldwide. The severity of these infections may significantly increase in children with underlying neurological conditions, particularly those with cerebral disorders. Children with cerebral impairments often present with reduced adaptive capacity, impaired immune responses, and difficulties in maintaining adequate hydration and nutritional status, which may predispose them to more severe clinical courses of infectious diseases. The aim of this study was to investigate the clinical characteristics and severity of acute intestinal infections in children with cerebral disorders. The study analyzed clinical manifestations, complications, and disease progression in pediatric patients diagnosed with acute intestinal infections and concomitant cerebral pathology. The results demonstrated that children with cerebral disorders experience more severe clinical manifestations of acute intestinal infections, including prolonged diarrhea, dehydration, electrolyte imbalance, and increased risk of complications. In addition, the recovery period in this group of patients tends to be longer compared to neurologically healthy children. The findings highlight the importance of early diagnosis, careful monitoring, and individualized therapeutic strategies in children with cerebral disorders suffering from acute intestinal infections. Improved understanding of the disease course in this vulnerable population may contribute to better clinical management and prevention of severe complications.

Keywords: Acute intestinal infections, cerebral disorders, children, dehydration, neurological impairment, pediatric infections.

Introduction: Acute intestinal infections (AII) remain one of the most common causes of morbidity among children worldwide and represent a significant public health problem, particularly in developing countries. These infections are characterized by inflammation of the gastrointestinal tract and are usually caused by a wide range of pathogens, including viruses, bacteria, and parasites. According to epidemiological studies, acute intestinal infections account for a substantial proportion of pediatric hospitalizations and are often associated with dehydration, electrolyte disturbances, and metabolic disorders. The clinical course of acute intestinal infections can vary considerably depending on several factors, including the child's age, immune status, nutritional condition, and the presence of underlying chronic diseases. Among children with chronic neurological conditions, particularly those with cerebral disorders such as cerebral palsy or other forms

of brain dysfunction, infectious diseases may follow a more severe and complicated course. These children frequently exhibit multiple functional impairments that may influence the progression and outcome of infectious processes. Children with cerebral disorders often experience motor dysfunction, impaired swallowing, feeding difficulties, and reduced physical activity. These conditions can lead to malnutrition, weakened immune defense mechanisms, and increased vulnerability to infectious diseases. In addition, neurological impairment may affect gastrointestinal motility and intestinal barrier function, which may further contribute to the development and progression of intestinal infections. Another important factor is the difficulty in maintaining adequate hydration in children with neurological impairments. Due to swallowing difficulties, communication limitations, and feeding disorders, these children may

not receive sufficient fluid intake during episodes of illness. As a result, acute intestinal infections in such patients are often accompanied by more pronounced dehydration and electrolyte imbalance, which can significantly worsen the clinical condition. Previous studies have shown that children with chronic neurological disorders tend to have a higher risk of hospitalization and complications during infectious diseases. However, despite the clinical importance of this issue, the specific features and severity of acute intestinal infections in children with cerebral disorders have not been sufficiently studied. Understanding the characteristics of these infections in neurologically impaired children is essential for improving early diagnosis, optimizing treatment strategies, and preventing severe complications. Therefore, the present study aims to investigate the clinical features and severity of acute intestinal infections in children with cerebral disorders, as well as to evaluate the factors contributing to the severe course of the disease in this vulnerable group of pediatric patients.

METHODS

This study was conducted to investigate the clinical course and severity of acute intestinal infections in children with cerebral disorders. The research was carried out in a pediatric infectious diseases department where children with confirmed diagnoses of acute intestinal infections were hospitalized and received medical treatment. The study included pediatric patients aged from infancy to 14 years who were diagnosed with acute intestinal infections. The main group consisted of children with confirmed cerebral disorders, including cerebral palsy and other neurological impairments affecting brain function and motor activity. These children had previously been diagnosed with neurological conditions by pediatric neurologists. A comparison group consisted of children with acute intestinal infections who did not have any neurological disorders. Clinical and laboratory data of the patients were analyzed during hospitalization. The evaluation included demographic characteristics such as age and gender, as well as clinical manifestations of the disease. Special attention was paid to the severity of dehydration, frequency of diarrhea and vomiting, duration of fever, and the presence of complications during the course of the disease. The severity of acute intestinal infections was assessed according to standard clinical criteria, including the degree of dehydration, electrolyte imbalance, and general clinical

condition of the patients. Children were categorized into mild, moderate, or severe forms of the disease based on clinical evaluation and laboratory findings. Laboratory investigations included routine blood tests, electrolyte analysis, and stool examinations to identify potential infectious pathogens. In some cases, bacteriological and virological tests were performed to determine the etiological agents responsible for the infection. In addition, the duration of hospitalization, the need for intensive rehydration therapy, and the development of complications were recorded and analyzed. Particular attention was given to the comparison of disease severity between children with cerebral disorders and neurologically healthy children. Statistical analysis was performed to evaluate differences between the groups. The collected data were analyzed using standard statistical methods to determine the significance of the observed differences in clinical outcomes between the study groups.

RESULTS

The analysis of clinical data demonstrated that the course of acute intestinal infections in children with cerebral disorders was significantly more severe compared to children without neurological impairments. Children with cerebral disorders more frequently presented with severe dehydration, prolonged diarrhea, and repeated vomiting. In many cases, the duration of the disease was longer, and the recovery period required more intensive medical supervision and treatment. The frequency of severe forms of acute intestinal infections was noticeably higher among children with cerebral disorders. These patients often showed signs of moderate to severe dehydration due to difficulties in maintaining adequate fluid intake. In addition, feeding difficulties and impaired swallowing reflexes contributed to the progression of dehydration and electrolyte imbalance. Another important finding was the longer duration of hospitalization in children with cerebral disorders. These patients required prolonged rehydration therapy and closer monitoring by healthcare professionals. The presence of neurological impairment complicated the clinical management of the disease and often delayed the recovery process. Furthermore, complications such as electrolyte disturbances, metabolic imbalance, and persistent weakness were observed more frequently in children with cerebral disorders than in neurologically healthy children.

Table 1

Severity of Acute Intestinal Infections in Children

Severity of disease	Children with cerebral disorders (%)	Children without neurological disorders (%)
Mild	18	42
Moderate	46	38
Severe	36	20

The data presented in Table 1 show that severe forms of acute intestinal infections were significantly more common among children with cerebral disorders.

While mild forms predominated in neurologically healthy children, moderate and severe forms were more frequently observed in the group with neurological impairments.

Table 2

Clinical Characteristics of Acute Intestinal Infections

Clinical indicator	Children with cerebral disorders	Children without neurological disorders
Duration of diarrhea (days)	5–7	3–4
Frequency of vomiting	frequent	moderate
Degree of dehydration	moderate–severe	mild–moderate
Duration of hospitalization (days)	7–9	4–6

These findings indicate that neurological impairment plays an important role in the progression and severity of acute intestinal infections in children. The presence of cerebral disorders contributes to a more complicated clinical course and increases the risk of severe dehydration and prolonged illness.

DISCUSSION

The present study demonstrates that acute intestinal infections in children with cerebral disorders tend to follow a more severe clinical course compared to children without neurological impairments. The findings of this research highlight the significant influence of neurological pathology on the progression and outcomes of infectious diseases in pediatric patients. One of the most important findings of the study is the higher frequency of severe forms of acute intestinal infections among children with cerebral

disorders. This observation may be explained by several physiological and functional factors associated with neurological impairment. Children with cerebral disorders often suffer from motor dysfunction, feeding difficulties, swallowing disorders, and reduced physical activity. These conditions can contribute to poor nutritional status and weakened immune responses, increasing susceptibility to infections and complicating their clinical course. Another important factor contributing to the severity of intestinal infections in these patients is the increased risk of dehydration. Children with cerebral disorders frequently experience difficulties in maintaining adequate fluid intake due to impaired swallowing reflexes, communication limitations, and feeding problems. As a result, episodes of diarrhea and vomiting may rapidly lead to moderate or severe dehydration, which significantly worsens the patient's overall condition. The longer duration of

hospitalization observed in children with cerebral disorders also reflects the complexity of managing infectious diseases in this group of patients. In many cases, these children require prolonged rehydration therapy, careful monitoring of electrolyte balance, and individualized medical management. These factors contribute to a slower recovery process compared to neurologically healthy children. Similar findings have been reported in several previous studies, which indicate that children with chronic neurological conditions have an increased risk of severe infections and complications. Neurological impairment may alter immune function, gastrointestinal motility, and metabolic regulation, which in turn affects the body's ability to respond effectively to infectious agents. In addition, gastrointestinal dysfunction commonly observed in children with cerebral disorders may further aggravate the clinical course of intestinal infections. Impaired intestinal motility, changes in gut microbiota, and reduced barrier function of the intestinal mucosa may facilitate the development and persistence of gastrointestinal infections. Therefore, the results of this study emphasize the importance of early diagnosis and prompt treatment of acute intestinal infections in children with cerebral disorders. Special attention should be given to the prevention of dehydration, maintenance of adequate nutritional support, and careful monitoring of clinical symptoms in this vulnerable group of patients.

CONCLUSION

The results of the present study indicate that acute intestinal infections in children with cerebral disorders tend to have a significantly more severe clinical course compared to children without neurological impairments. Children with cerebral disorders were more likely to develop moderate to severe dehydration, prolonged diarrhea, and complications related to electrolyte imbalance. Neurological impairment appears to play an important role in the progression of infectious diseases by affecting several physiological mechanisms, including feeding ability, swallowing function, immune response, and gastrointestinal motility. These factors may contribute to increased vulnerability to severe forms of acute intestinal infections and longer recovery periods. The findings of this study highlight the need for early diagnosis, careful monitoring, and individualized treatment strategies in children with cerebral disorders who develop acute intestinal infections. Special attention should be given to maintaining adequate hydration, correcting electrolyte disturbances, and providing appropriate nutritional support. Improved clinical management of these patients may help reduce the risk of severe complications, shorten the duration

of hospitalization, and improve overall treatment outcomes. Further research is recommended to better understand the mechanisms underlying the severe course of intestinal infections in children with neurological disorders and to develop more effective preventive and therapeutic approaches.

REFERENCES

1. Tabylov, A., Suyeuova, N., & Yusupov, A. (2021). Robotizatsiya sovremennykh skladskikh logisticheskikh kompleksov [Robotization of modern warehouse logistics complexes] [in Russian]. *Vestnik KazATK*, 119(4), 58–66.
2. Yusupov, A. (2025). The spread of measles in unvaccinated children and preventive measures. *Science*, 4(2–4), 114–117.
3. Yusupov, A. S. (2025). Course of dysentery complicated by intestinal bleeding in children. *Eurasian Journal of Medical and Natural Sciences*, 5(12), 40–47.
4. Tabylov, A. U., & Yusupov, A. A. (2021). Transformatsionnye tsentry kak gibkie proizvodstvenno-logisticheskie sistemy dlya preobrazovaniya materialnykh potokov [Transformation centers as flexible production-logistics systems for transforming material flows] [in Russian]. *Vestnik KazATK*, 116(1), 222–227.
5. Yusupov, A. S., Tadzhiyev, B. M., & Fayziyev, B. O. (2020). Tehenie virusnogo gepatita A s endotoksicheskim sindromom u detey [Course of viral hepatitis A with endotoxemic syndrome in children] [in Russian]. In *Universitetskaya nauka: vzglyad v budushchee* (pp. 487–489).
6. Yusupov, A. S., & Fayziyev, B. O. (2020). Effektivnost Enterola pri lechenii ostrykh diareynykh zabolovaniy u detey [Effectiveness of Enterol in the treatment of acute diarrheal diseases in children] [in Russian]. In *Nedelya molodezhnoy nauki – 2020* (p. 174).
7. Yusupov, A. S., Fayziyev, B. O., & Karimova, D. U. (2019). Pokazateli kletochnogo immuniteta u bolnykh s virusnym gepatitom C [Indicators of cellular immunity in patients with viral hepatitis C] [in Russian]. *Aktualnye voprosy sovremennoy nauki*, (2–3), 45–49.
8. Yusupov, A. S., Narimov, N. A., Salimov, A. I., & Ernazarov, E. K. (2019). Otsenka effektivnosti obezbolivaniya v posleoperatsionnom periode u detey [Evaluation of postoperative pain relief effectiveness in children] [in Russian]. In *Nedelya nauki – 2019* (pp. 736–737).
9. Yusupov, A. S., Tadzhiyev, B. M., & Fayziyev, B. O. (2019). Pokazateli urovnya endogennoy

- intoksikatsii u bolnykh s virusnym gepatitom A na fone ORVI [Indicators of endogenous intoxication level in patients with viral hepatitis A associated with ARVI] [in Russian]. In *Nedelya nauki – 2019* (pp. 475–476).
10. Yusupov, A. S., Fayziev, B. O., & Karimova, D. U. (2019). Pokazateli kletochnogo immuniteta u bolnykh s virusnym gepatitom C [Indicators of cellular immunity in patients with viral hepatitis C] [in Russian]. *Aktualnye voprosy sovremennoy nauki*, (2–3), 45–49.
 11. Yusupov, A. S., Fayziev, B. O., & Karimova, D. U. (2019). Immunologicheskie sdvigi u bolnykh s khronicheskim virusnym gepatitom C [Immunological changes in patients with chronic viral hepatitis C] [in Russian]. In *Prioritetnye napravleniya razvitiya nauki i obrazovaniya* (pp. 190–192).
 12. Yusupov, A. S., Fayziev, B. O., & Tashpulatov, S. A. (2018). Izmenenie immunnoy sistemy pri toksikoze, obuslovlennom khronicheskim virusnym gepatitom na fone khronicheskogo pielonefrita [Changes in the immune system during toxicosis caused by chronic viral hepatitis associated with chronic pyelonephritis] [in Russian]. In *Nauka XXI veka – vzglyad v budushchee* (pp. 115–119).
 13. Yusupov, A. S., Umarov, T. U., Mirismailov, M. M., & Fayziev, B. O. (2018). Izmenenie laboratornykh pokazateley pri ostrom i khronicheskom virusnom gepatite C u detey [Changes in laboratory indicators in acute and chronic viral hepatitis C in children] [in Russian]. In *Perspektivy razvitiya mirovoy sotsialno-ekonomicheskoy sistemy* (pp. 195–199).
 14. Yusupov, A. S., Daminova, M. N., Khalikova, Sh. A., & Fayziev, B. O. (2017). Izmenenie aminokislotnogo sostava krovi pri khronicheskom virusnom gepatite C u detey [Changes in amino acid composition of blood in children with chronic viral hepatitis C] [in Russian]. *Problemy i perspektivy sovremennoy nauki*, (17), 68–71.
 15. Yusupov, A. S., Yusupov, A. S., & Rakhimov, B. O. (2016). Metabolicheskie izmeneniya pri virusnom gepatite A s funktsionalnoy nefropatiy u detey [Metabolic changes in viral hepatitis A with functional nephropathy in children] [in Russian]. *Sovremennyy mir: opyt, problemy i perspektivy razvitiya*, 2(1), 3–6.
 16. Yusupov, A. S. (2013). Gormonalno-metabolicheskie izmeneniya v usloviyakh razlichnykh metodov anestezii pri provedeniya khirurgicheskikh vmeshatelstv u detey [Hormonal and metabolic changes under different anesthesia methods during surgical interventions in children] [in Russian]. *Vestnik ekstremnoy meditsiny*, (3), 295.