International Journal of Pediatrics and Genetics
Vol. 3 No. 10 (2025)
ISSN: 2995-5483

Features of Clinical Syndrome Manifestation in Children with Functional Bowel Disorders against the Background of Anemia

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Abstract: this article is devoted to the study of the etiology, pathogenesis, clinic, diagnosis, treatment of chronic pancreatitis.

Key words: proliferative fibrosis, chronic indurative pancreatitis, persistent inflammation, purulent or necrotic masses, pancreatic amylase, lipase.

Relevance. Functional bowel disorders are the leading pathology of the digestive system in children and account for up to 30% of all hospitalizations due to complaints of intestinal disorders. At the same time, most of the disorders are caused not by organic lesions of the organs, but by their regulatory dysfunction. Thus, recurrent abdominal pain in children is functional in 90–95% of cases, while organic pathology is identified in only 5–8% of all gastrointestinal diseases [1, 5, 6, 8, 10].

Functional bowel disorders (FBD) represent a heterogeneous group of disorders characterized by impaired motility, sensory function, and regulation of the intestine in the absence of organic pathology. In pediatrics, these conditions are considered a significant factor in reducing quality of life, developing nutritional deficiencies, and causing cognitive and psychoemotional disorders in children, which may lead to more serious chronic diseases [3, 4, 9, 10].

Thus, the study of clinical syndromes of functional bowel disorders in children with anemia represents a relevant task in modern pediatrics, aimed at improving the quality of medical care and reducing the risk of adverse outcomes.

The aim of the study: to investigate the characteristics of clinical syndrome manifestations in young children with functional bowel disorders against the background of anemia.

Materials and Methods. The study included 164 young children (aged 1 to 3 years). The main group consisted of 144 patients with functional bowel disorders (FBD) diagnosed against the background of anemia of varying severity (mild, moderate, and severe forms). The control group included 20 children with anemia without signs of functional bowel disorders (FBD). The classification of functional bowel disorders was carried out according to the ICD-10 criteria. A comprehensive examination was conducted, including a biochemical blood analysis to determine the levels of total

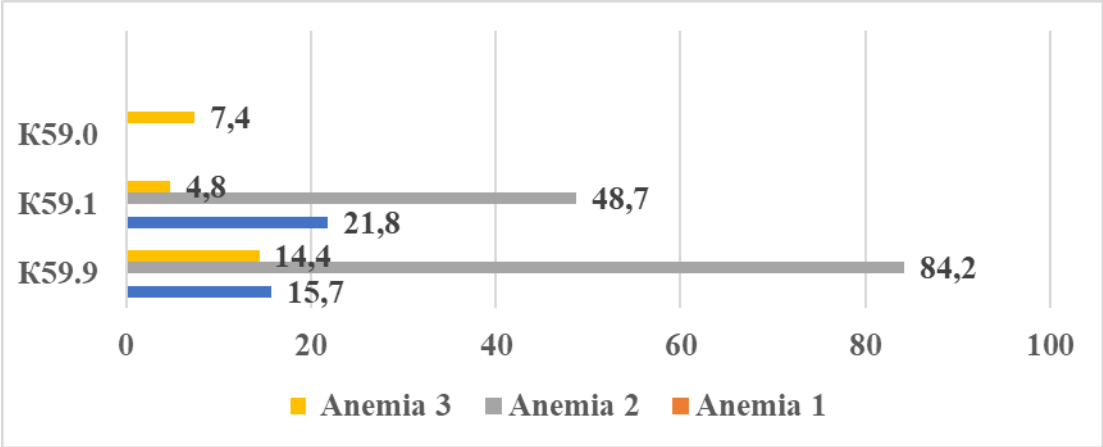
Vol. 3 No. 10 (2025)
ISSN: 2995-5483

protein, calcium, iron, ferritin, vitamin B_{12}, and vitamin D, which made it possible to identify concomitant deficiency conditions associated with anemic syndrome and impaired intestinal function.

Results and Discussion. According to the analysis of the sample by age and gender, among one-year-old children, boys accounted for 58.8% and girls for 41.1%, while in the group of two-year-old children, boys made up 55.5% and girls 44.5%. At the age of three, the proportion of boys increased to 70.0%, while that of girls decreased to 30.0%. The distribution by severity of anemia in children with functional bowel disorders (K59.9) showed that grade 1 anemia was observed in 13 children (17.1%), grade 2 anemia in 55 patients (62.4%), while severe anemia (grade 3) was identified in 8 children (10.5%). In the group of children with functional diarrhea (ICD-10: K59.1), the pattern of anemia was different. Mild anemia (grade 1) was recorded in 12 patients (29.3%), moderate anemia in 25 (60.9%), and severe anemia was diagnosed in 4 children (9.7%). In functional constipation (ICD-10: K59.0), anemia was also a common occurrence; however, its distribution differed: grade 1 anemia was observed in 11 children (40.7%), grade 2 anemia in 13 children (48.1%), and severe anemia in 3 patients (11.1%). Among the 20 children in the control group, mild and moderate anemia were equally observed in 7 children each (35.0%), while severe anemia was present in 6 children (30.0%).

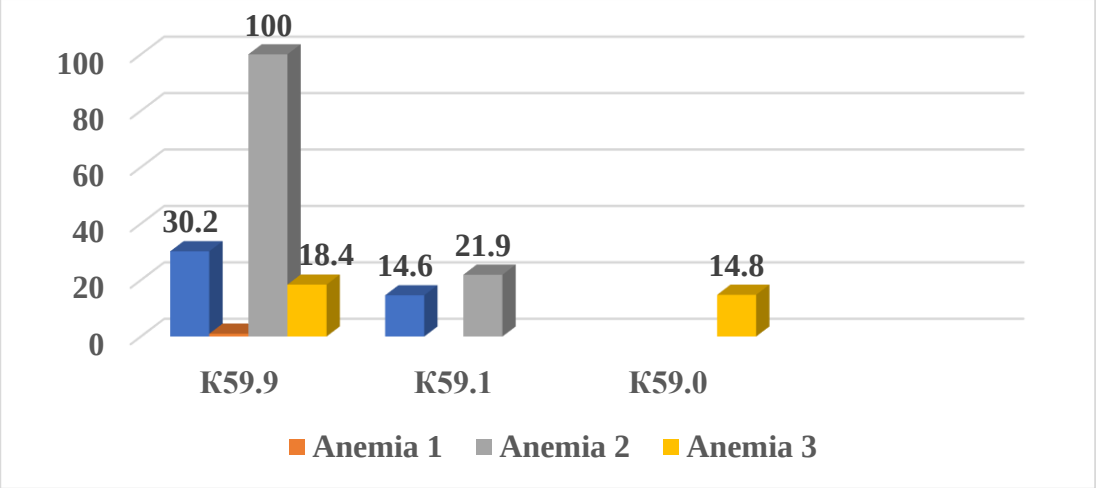
Analysis of clinical data showed that young children with functional bowel disorders (FBD) against the background of anemia of varying severity develop a characteristic symptom complex, including abdominal, dyspeptic, asthenoneurotic, and intoxication syndromes. The frequency and severity of these manifestations depended on the severity of anemia and the type of functional bowel disorder (K59.9 — unspecified disorders, K59.1 — functional diarrhea, K59.0 — functional constipation). Abdominal syndrome (colic, flatulence) in the main group (K59.9) was most frequently observed with grade II anemia: recorded in 64 cases (84.2%), while with mild anemia in 12 cases (15.7%), and with severe anemia in 11 children (14.4%) (see Diagram 1).

Diagram 1. **Abdominal syndrome in children of the main group, %.**



In functional diarrhea (K59.1), this symptom was observed in 20 children (48.7%) with grade II anemia, in only 9 children (21.8%) with mild anemia, and in rare cases, 2 children (4.8%) with severe anemia. In functional constipation (K59.0), abdominal complaints were found only in cases of severe anemia, occurring in 2 children (7.4%). Dyspeptic syndrome in children appeared as nausea and vomiting and was most common in grade II anemia. In unspecified functional disorders (K59.9), it was observed in all 76 cases (100%), while in mild anemia it occurred in 23 cases (30.2%), and in grade 3 anemia in 14 cases (18.4%). In functional diarrhea (K59.1), this syndrome was observed in 9 children (21.9%) with grade II anemia and 6 children (14.6%) with grade I anemia, while in functional constipation (K59.0), it was found in 4 children (14.8%) with grade III anemia. The frequency of dyspeptic manifestations was predominantly observed in grade 2 anemia (see Diagram 2).

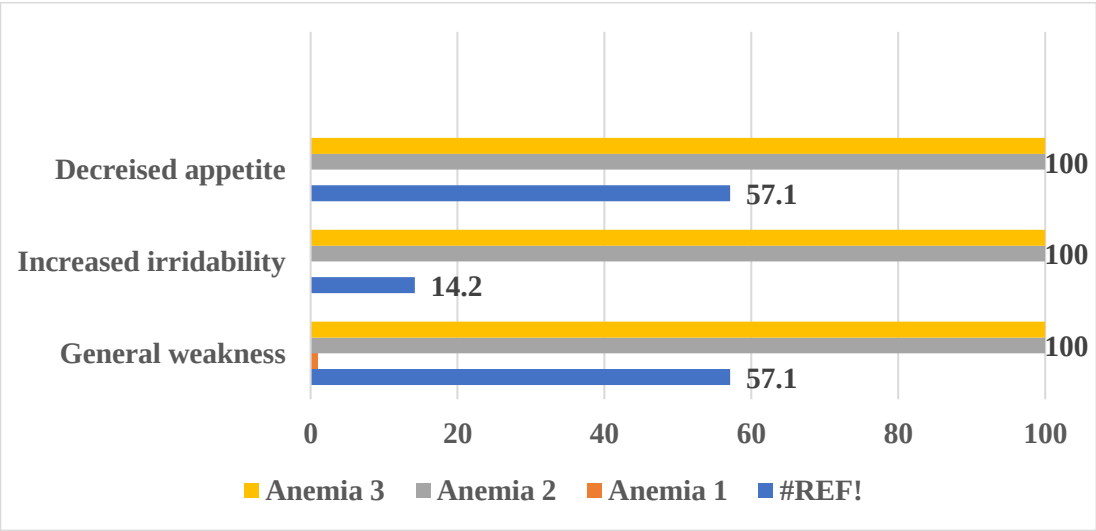
Diagram 2. Dyspeptic syndrome in children of the main group, %.



Asthenoneurotic syndrome (weakness, irritability, sleep disturbances) is characteristic of children with grade II anemia; for K59.9, it was recorded in all children (100%), while in grade I anemia — 19 children (25.0%), and in grade III anemia — 17 children (22.3%). For K59.1, 37 cases (90.2%) were recorded with grade II anemia, and 19 cases (46.3%) with grade I anemia, while severe anemia was accompanied by a significantly smaller number of observations — 4 cases (9.7%). In functional constipation (K59.0), asthenoneurotic manifestations were observed in 4 cases (14.8%) only with grade 3 anemia. Therefore, asthenoneurotic syndrome can be considered most characteristic of grade 2 anemia. Intoxication syndrome (sweating, loss of appetite, low-grade fever) was predominantly observed in grade II anemia; among children with unspecified functional bowel disorders (K59.9), it was noted in 76 children (100%), in grade I anemia — 18 children (23.6%), and in grade III anemia — 12 children (13.1%). In functional diarrhea (K59.1), this syndrome was observed in 38 children (92.6%) with grade II anemia, in 20 children (48.7%) with grade I anemia, and only in 7 children (17.0%) with grade III anemia. In functional constipation (K59.0), only 5 cases (18.5%) were noted with grade 3 anemia.

Analysis of mothers' complaints in the control group showed that asthenoneurotic syndrome was present in children with varying degrees of anemia; however, the severity and frequency of its manifestations depended on the severity of the condition. In grade 1 anemia (n=7), general weakness was noted in 4 children (57.1%), increased emotional irritability in 1 child (14.2%), and decreased appetite in 4 children (57.1%) (see Diagram 3).

Diagram 3. Clinical syndromes in children of the control group, %.



Thus, the manifestations of the syndrome were selective and less pronounced. In grade 2 anemia (n=7) and grade 3 anemia (n=6), the asthenoneurotic syndrome was complex in nature and observed in all children (100%). The main symptoms were pronounced weakness, decreased or complete loss of appetite, emotional irritability, and sleep disturbances.

Conclusions. Summarizing the results, it can be concluded that the anemia profile in children with functional bowel disorders depends both on the nosological form of the disease and on the severity of the anemia. From the structure of the prevalence of functional bowel disorders (FBD), the leading clinical syndromes are most pronounced in grade II anemia—abdominal and dyspeptic syndromes reflect digestive and intestinal motor disturbances, asthenoneurotic syndrome indicates the systemic impact of anemia, and intoxication syndrome represents the development of metabolic and immune shifts.

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