

"CLINICAL AND LABORATORY FEATURES OF SALMONELLA INFECTION IN CHILDREN"

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The article discusses the etiological structure, clinical and laboratory features of the
course of salmonellosis in children under the age of three years, revealed significant
differences in the duration, severity of the course and severity of the main clinical
manifestations in salmonellosis caused by *S. Typhimurium* and *S. Enteritidis*. In
salmonellosis caused by *S. Typhimurium*, a severe and undulating course,
hemocolitis, atopic dermatitis, increased ESR, re-isolation of *Salmonella* in a control
study and seeding of opportunistic microflora were significantly more often noted,
the duration of the disease and the time of stool normalization were significantly
higher.

Key words: children, intestinal infections, salmonellosis

Introduction Acute intestinal infections (AII) still occupy a leading place in the
infectious pathology of childhood, second only to acute respiratory infections in
terms of incidence [4]. Up to 70% of all acute intestinal infections are registered
among young children, which is explained by the morphological and functional
immaturity of the gastrointestinal tract, the weakness of local protective factors, the
beginning of the child's contact with the environment, and the beginning of visits to
children's institutions [3]. Among AII in children, salmonellosis plays an important
role due to its ubiquitous prevalence, lack of a downward trend in incidence, the
possibility of epidemic spread, and a high incidence of severe forms and
complications. At the same time, the incidence of salmonellosis in children of the
first three years of life is ten times higher than that among school-age children and
adults. A particularly unfavorable epidemic situation is observed in the Gomel

region, where the incidence of salmonellosis exceeds the figures for the republic by 1.3–3.8 times [2]. The current rise in the incidence (since 1993–1995) and its consistently high level to date is associated with an increase in the etiological significance of *S. Typhimurium*, along with *S. Enteritidis*, which retains its significance [1, 2]. The purpose of the study: to study the clinical and laboratory features of the course of salmonellosis of various etiologies in children during the first three years of life. **Materials and Methods** We analyzed the case histories of 145 children with salmonellosis aged 0 to 3 years who were treated in the children's department of intestinal infections of the Gomel Regional Infectious Clinical Hospital (GOIKB) for the period from December 2003 to September 2004. In 110 children (75.9%), the disease was caused by *S. Typhimurium* strains (group 1), in 35 children (24.1%) — by *S. Enteritidis* strains (group 2). Boys significantly predominated in both groups - 82 people (56.6%), girls were 63 (43.4%). With salmonellosis caused by *S. Typhimurium*, there were 66 children (60%) of the first year of life and 44 children (40%) from 1 to 3 years. With salmonellosis caused by *S. Enteritidis* - 22 children (62.9%) of the first year of life and 13 children (37.1%) - from 1 to 3 years. The premorbid background and the presence of concomitant pathology, the severity and duration of the main clinical symptoms, the time of normalization of clinical and laboratory parameters were assessed. **Results and discussion** Most of the children in the first year of life in both groups were bottle-fed (62.1% with salmonellosis caused by *S. Typhimurium* and 54.5% with *S. Enteritidis*). 18.2% of children in each group were breastfed, and the rest were mixed. Comparative characteristics of groups 1 and 2 are presented in Table 1 (only significant differences are given, $p < 0.05$).

All children had a gastrointestinal form of salmonellosis. Among patients 1 group, a severe course was observed in 22.7% of cases (up to a year - in 30.3%), which significantly higher than in 2 (11.4%). Differences between the number of moderate

(76.4% and 85.7% respectively) and lungs (0.9% and 2.9%, respectively) forms were not statistically significant. Phenomena intoxications were noted in 92.7% in group 1 and in 85.7% in group 2. The most characteristic was febrile temperature, which was observed in 64.5% in group 1 and in 62.9% - in group 2. Subfebrile temperature was in 23.6% and 22.9%, respectively, above 39°C - in 5.5% and 8.6%. There was no increase in temperature in 6.4% and 8.6%. The phenomena of dehydration of I-II degree were in 50% of children with salmonellosis, caused by *S. Typhimurium*, and in 40% with salmonellosis caused by *S. Enteritidis*. Vomiting was observed in 47.3% and 40%, enterocolitis phenomena - in 85.5% and 82.9% of cases respectively. Hemocolitis has been 45.5% of children in group 1 and 34.3% in group 2. At the same time, in children of the first year of life with salmonellosis caused by *S. Typhimurium*, the incidence of hemocolitis was 66.7%, which significantly higher than the same indicator in group 2. For salmonellosis due to *S. Enteritidis* in children older than one year hemocolitis was not observed. The average duration of hemocolitis in group 1 was 3.2 ± 0.28 days (3.4 ± 0.29 days in children of the first year of life, 1.2 ± 0.17 days in children older than a year), and in group 2 — 2.5 ± 0.53 days. Average stool normalization in group 1

occurred by 11.7 ± 0.88 days (by 14.5 ± 1.22 - up to a year, to 7.6 ± 0.93 - older than a year), which significantly higher than in group 2 — to 8.8 ± 0.80 day (by 10.3 ± 1.03 - up to a year, by 6.2 ± 0.88 - older than a year). An undulating course was also significantly more often observed with salmonellosis caused by *S. Typhimurium* (22.7% and 8.6%).

When comparing inflammatory changes in the general blood test, significant differences were found only in changes in ESR (increased in 52.7% - in group 1 and in 31.4% - in group 2). Leukocytosis was observed in 49.1% and 40%, shift of the leukocyte formula to the left - in 49.1% and 42.8%, respectively. Bacteriological sanitation was followed up in 70% of children of the 1st group and 80% of the 2nd group. Repeated *Salmonella* culture was observed in 20 children (18.9%) with salmonellosis caused by *S. Typhimurium*, and only 1 child (2.9%)

with salmonellosis caused by *S. Enteritidis*. In the rest of the children, the control cultures did not were carried out. In children of group 1 significantly more often in bacteriological examination opportunistic pathogenic microflora was isolated (UPF) (in 34.5% and 20%, respectively).

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