

CLINICAL AND EPIDEMIOLOGICAL STUDY OF SALMONELLOSIS OF CHILDREN AGED UP TO THREE YEARS

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The recent salmonella infections take particular place in the total structure of the acute enteral diseases (1, 2, 3, 9). It must be pointed out that the clinical development and epidemiology of the children's salmonellosis is still far from a detailed investigation (4, 5, 6, 7), while the specific therapy tends to certain problems due to the increasing number of resistant etiological agents.

During 1973—75 we investigated 183 children aged up to 3 years suffering from salmonellosis and treated in the clinic of infectious diseases — Varna city. 79.23% are up to one year, while 20.77% — between 1 and 3 years. These of the first age-group are divided into: 0—1 month (16.93%), 2—3 months (44.20%), 7—12 months (18.04%) and those of the second age-group: 1—2 years (14.21%), 2—3 years (6.50%). 59.01% of all children are boys and 40.99% — girls. The salmonella infections are mainly sporadic. 15.28% of all 183 patients have suffered recently from other diseases. During their hospitalisation they have the following additional diseases: rhinopharyngitis (12.56%), bronchitis (4.30%), purulent otitis (8.19%), measles (1.09%), bronchopneumonia (18.57%), etc. 48.08% of the children are members of the so-called "risk-groups": prematurely born (9.80%), hypothyroid (19.67%), artificially fed (19.13%). 33.87% are discharged from various pediatric departments and clinics where they have been treated with different combinations of antibiotics and corticosteroids for a long term. Varna city house "Mother and Child" sends 20.76% of our patients, mainly up to 6 months old, born out of wedlock (illegitimate). The cold character of the additional diseases as well as the necessity of hospitalization and bacteriological investigation probably determines the uncharacteristic seasonal curve of the studied enteral infection. Highest seasonal index shows March, while the lowest values of the indexes can be found during April—September. Similar characteristics of the seasonal curve is determined for the salmonellosis patients, while the carriers show such highest seasonal index during December and a second one during January.

The parents of the hospitalized children with additional diseases are professionally divided as follows: officers (13.95%), workers (32.56%), qualified workers (30.23%). The other children, without additional diseases, have the following parents, divided into professional groups: office workers (21.82%), industrial workers (34.55%), qualified workers (18.18%), agricultural workers (25.45%). Except "Mother and Child", the pediatric departments and the family microclimate of the aforementioned professional groups do not differ considerably concerning their possibilities to contribute to the dissemination of the salmonella infections amidst

the age-group between 0 and 3 years. 7 types salmonella of the groups B, C, D and E are isolated from the patients and the carriers. *S. heidelbergii* is the most often — 83.06%, followed by *S. typhimurium* — 3.83%, *S. derby* — 1.09%, *S. bovis* — 1.09%, *S. endenteritidis* — 5.46%, *S. isangii* — 1.09%. *S. cholerae suis* — 0.55%, others — 3.83%. Salmonellosis with additional diseases — 28.29%, without — 36.18%. Carriers with additional diseases — 15.79%, without — 19.74%. It is evident that the additional diseases do not stimulate the manifestation of the latent salmonella infection. This view supports the idea of the pathogenic character of the studied salmonellosis and not its conditional pathogenicity.

The average hospitalization-period of the children with clinical manifestation is 29.34 days, while that of the carriers is up to 167 days. The carriers themselves are 35.53% of all patients. The main clinical form of the salmonellosis of this age-group is gastrointestinal (64.47%). The symptoms of dyspepsia and total intoxication are thoroughly expressed. The diarrhoea is the most common symptom (96.0%) with an expressed stability and continuous resistance towards the medicinal treatment. It tends to a quick and heavy exsiccosis, cardiovascular disorders and late hypotrophy of the children. The faeces is mellow (38.93%), watery (20.61%), with particles of the mucous membrane (40.45%) or with strings (curdles) in a few cases (9.10%). Very characteristic are the fecal masses which are either soft and mellow with particles of greenish crystalline mucosa or watery and lavish. Some of the cases (10.68%) have faeces which is typical for dysentery (dysenteric form of salmonellosis) — small quantity of mellow masses with mucosa and blood foci. Abdominal pains, loss of appetite, even total denying of food and continuous vomiting are quite often symptoms established with almost half of the children in our study. Tympanism in a different degree, even a total paralytic ileus, is a frequent finding and prognostically important sign. 45.05% of the patients have an increased temperature (sub-febrile most of all). Some of the cases, especially the septic forms, show hyperpyrexia. The symptoms of the total intoxication: expressed feebleness, almost full prostration, pale or bluish-grey colour of the skin and lips, rapid and soft pulse, dull cardiac sounds and stupor, are all established more often at the beginning of the disease, but also later — during the aggravation-periods. The clinical course of the salmonella infections is considerably dependent on the age. The heavier the symptoms are, the younger the child is. Toxicosis with faintness is established in 8 (4.92%) of the suckings, while subtoxicosis with slight feebleness, prostration and heavy gastroenterocolitic syndrome is quite more often found.

Septic reactions with prolonged and heavy course, leucocytosis, cardiovascular disorders and dyspepsia, enlarged spleen and liver, are established in 14 (7.65%) of our patients. There are also some organic complications: pneumonia (4.58%), purulent otitis (1.52%), myocarditis (3.81%), pyelonephritis (1.52%), necrotic enteritis (2.29%), cholangiohepatitis (1.52%), haemorrhagic pericarditis (0.76%), purulent meningoencephalitis (2.29%), haemorrhagic diathesis (2.29%). The infection of 5 children (2.74%) begins influenzalike with high temperature, catharrh of the upper pulmonary tracts, adynamia, coughing, dyspepsia (in later days). The prolongation of salmonellosis of 59.54% of the children is up to one month, while 40.46% show a continuous course with many waves of acute reinfections.

24 (13,11%) of all investigated 183 children with salmonella infections died. 22 of them (12.02%) were up to 6 months old. High percent morbidity with salmonellosis in the early childhood is reported by other authors too (10). We accept that salmonella mortality is due to: former and additional diseases, inborn malformations (5 cases), hypotrophy. It is worth reporting that most of the lethal cases are those of children from "Mother and Child".

Antibiotics, venous rehydration, electrolitic and acid-alkaline disorders' correction, have all an important significance for the treatment of our cases with salmonellosis. Polyvitamine therapy and application of nutritive hormones, haemo- and plasmotransfusions, spasmolytics, antipyretics and sedativa, is widely indicated.

As for the bacteriological sanitation of the patients, we have to underline that although the application of numerous medicines and antibiotal treatment, 20.21% of all are discharged as healthy carriers of infection. We presume that the prolonged antibiotal therapy tends to a higher percent salmonella carriers.

Conclusions

1. The clinical study of 183 children aged between 0 and 3 years, shows a great variety of the clinical manifestation, but always accompanied by stomach-enteral disorders (64.47% — for the clinical cases and 35.53% for the carriers).

2. Some innate malformations, former and additional diseases, also poor nutrition, tend to a heavier clinical course of salmonella infections and lethality, mainly, concerning the so called "risk group" — children.

3. In spite of the etiological treatment 20.21% of the children are bacteriologically unsanated salmonella carriers.

4. The salmonellosis has a seasonal characteristics, being an enteral infection, perhaps also because of the additional respiratory diseases, requiring hospitalization and bacteriological investigation.

5. The analysis of the actual epidemiological characteristics of the children-salmonellosis requires a more profound investigation of all age-groups.

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КЛИНИКО-ЭПИДЕМИОЛОГИЧЕСКИЕ ИССЛЕДОВАНИЕ САЛЬМОНЕЛЛЕЗА У ДЕТЕЙ В ВОЗРАСТЕ ДО ТРЕХ ЛЕТ

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Р Е З Ю М Е

Исследовано 183 детей в возрасте до трех лет, которые лечились в клинике инфекционных болезней в г. Варне в период с 1973 по 1975 г. г. Наблюдение показывает значительное разнообразие в клинической картине с преобладанием желудочно-кишечных явлений, наличие интоксикации и значительное число переносчиков заразы. Для тяжелого течения сальмонеллезного заболевания имели значение некоторые врожденные уродства, предшествовавшие и сопровождающие другие соматические заболевания. Приобретало значение также и нарушение питания у детей, причисляемых преимущественно к т. н. «рисковым группам». В 20,21% всех случаев, независимо от проведенного этиологического лечения, не было достигнуто бактериологического оздоровления и дети остались переносчиками сальмонеллез. Среди наблюдаемых детей отмечен высокий летальный исход — в 13,11% всех случаев.

Авторы считают, что выяснение эпидемиологической характеристики сальмонеллез у детей требует более полного исследования с охватом всех групп детского возраста.