

FEATURES OF INTESTINAL TOXICOSES IN CHILDREN OF EARLY AGE

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Abstract

As shows experience, in the standard techniques of diagnostics and treatment of intestinal toxicoses at children (at their application' in conditions of a hot climate) entering some specifications concerning first of all features rehydration of therapy, and also of some the organizational moments is necessary. The last are especially important, as the combination of a hot climate and disease intestinal infections with some social factors (high birth rate, high densities of children in age structure of the population, residing of 2/3 children at a countryside) demand concrete recommendations both for practical doctors, and for organizers of pediatric service.

Introduction

According to data from the World Health Organization (WHO) in collaboration with UNICEF, a strategy has been developed. This strategy integrates improved management of childhood diseases with aspects of nutrition, immunization, and other key factors influencing the child's health, including maternal health [6,7]. Diarrhea (intestinal toxicoses) and severe malnutrition continue to account for a high proportion of mortality in children under 5 years of age. The global burden of disease analysis conducted in 2000 indicates that these conditions will persist as major causes of child mortality through 2020 unless significantly greater efforts are undertaken to address them [3,7].

Research Objective

Research Objective: As experience shows, certain clarifications need to be made to the accepted methods of diagnosis and treatment of intestinal toxicoses in children (when applied in hot climate conditions), primarily concerning the features of rehydration therapy, as well as a number of organizational aspects. The latter are particularly important because the combination of hot climate and morbidity from intestinal infections with certain social factors (high birth rate, high proportion of children in the population's age structure, and residence of two-thirds of children in rural areas) requires specific recommendations for both practicing physicians and organizers of pediatric services.

Materials and Methods of the Study

Observations indicate that water-deficit dehydration is more common, and in hot climates, it is predominant. For the rapid differentiation of dehydration type upon a child's admission to the hospital, we use a table of key symptoms (Table 1), in which body temperature and thirst are listed



first. The table is convenient and simple to memorize (all parameters are elevated in the water-deficit type and decreased in the salt-deficit type).

Table 1. Types of Dehydration

Symptom/Indicator	Water-Deficit	Isotonic	Salt-Deficit
Body temperature	Significantly elevated	Normal/subfebrile	Tendency to hypothermia
Thirst	Strongly expressed	Moderate	Refusal of water
State of the central nervous system	Agitation	Some lethargy	Adynamia
Plasma sodium content	Elevated	Normal	Decreased

For the differentiation of the degree of dehydration and simultaneous calculation of the volume of fluid necessary for rehydration therapy, we propose a table compiled in the style of the known Dennis scheme (calculations for newborns are based on slightly modified data from V.M. Balagin and co-authors). All children with dehydration need additional fluid. If the child has diarrhea: how long? If there is blood in the stool? To do this, it is necessary to inspect and palpate:

- 1) The general condition of the child (lethargic or unconscious), restless or painfully irritable;
- 2) Check if the child has sunken eyes;
- 3) Offer the child fluid - the child drinks poorly, drinks greedily. There is a process of severe dehydration.

The basis of treatment involves the intake of additional fluid (as much as the child will drink). If the child is exclusively breastfed, give ORS at 5 ml/kg/hour for 3-4 hours and observe. If not breastfed: ORS solution, fluids based on food products (such as soup, rice broth, kefir, biolact, kumys).

In addition to the usual amount of fluid: Up to 2 years: 50-100 ml after each loose stool; 2 years and older: 100-200 ml after each loose stool.

Continue to give additional fluid until the diarrhea completely stops [4,7]. For the differentiation of the degree of dehydration in the table the degree of dehydration was determined using solely the primary indicator-loss of body mass (in %) - with diuresis serving as an auxiliary symptom ([1,3], Table2).

Table 2. Determination of the Degree of Dehydration and Calculation of the Total Fluid Requirement for Rehydration Therapy in Intestinal Toxicosis in Children on the 1st Day of the Disease

Degree of Dehydration	Weight Loss, %	Diuresis	From 7 days to 1 month	1-3 months	3-6 months	7-12 months	1-3 months
I (Mild)	Up to 5 (up to 10 newborns)	Preserved	190-220	170-180	150-160	130-140	100-130
II (Moderate)	5-10 (up to 15 newborns)	Oliguria	220-270	190-210	175-185	150-170	130-170
III (Severe)	Over 10 (up to 20 newborns)	Oliguria up to anuria	270-350	220-250	20200-210 1*	170-190	160-171

Based on this, a rule was introduced whereby the primary care physician, when referring a child with intestinal toxicosis to inpatient care, must compulsorily record the result of the child's most



recent outpatient clinic weighing (prior to illness) and the date thereof. This approach eliminates errors in estimating the degree of body mass loss that may be attributable to deviations in the child's pre-illness weight growth curve. Upon determining the degree of dehydration per Table 2, the volume of fluid required for the first day of treatment is calculated. In cases of elevated body temperature or ambient air temperature-critical considerations in the context of Central Asian additional volume of fluid is administered. If rehydration therapy has been initiated in children at the prehospital stage, the symptoms of water deficit and plasma hypertonicity (hydrotonicity) observed in the water-deficit variant may markedly diminish within several hours. This reduction provides grounds for reassessing dehydration as isotonic upon the child's inpatient admission.

Conclusion

The proportion of water-deficit dehydration in the overall structure of intestinal toxicosis cases among infants in conditions of hot climate ranges from 65 to 75%, and this type predominates. To achieve qualitatively new results, a more integrated approach to managing affected children is essential. Health protection programs for children must address not only disease control but also overall well-being and the welfare of children.

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