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NEUROLOGICAL AND ALLERGO-IMMUNOLOGICAL INDICATORS CHILDREN WITH HELMINTHIC INVASION

Hamidova Nargiza Qosimovna
Bukhara State Medical Institute
E-mail.: hamidova.nargiza@bsmi.uz

✓ ***Resume,***

A detailed analysis of the main clinical and laboratory parameters in groups of children suffering from allergic rhinitis (AR) with concomitant hymenolepiasis during antiallergic, antiparasitic and complex therapy is given. Patients with AR with hymenolepidoses were divided into three groups: 21 patients received antiallergic therapy, 22 patients received antiparasitic therapy, and 24 patients underwent complex therapy. The maximum clinical effect was achieved by us with the use of complex treatment, which included antiallergic and antiparasitic therapy.

Key words: hymenolepiasis, children, dynamics, immunology.

Relevance

Uzbekistan is among the countries with a hot climate, where helminthic and protozoal diseases are endemic [1]. Currently, the number of infected individuals is about 200,000, with 70% being children under the age of 14. The most widespread protozoal infection in Uzbekistan is giardiasis, while among helminthic infections, hymenolepiasis is the most prevalent [5,8]. The widespread nature of parasitic infections and the severity of the organ damage they cause have not only medical but also socio-economic significance [4,7].

Parasitic diseases are characterized by relatively slow development, chronic progression, and often prolonged compensation. This characteristic is one of the main reasons why the medical and social significance of these diseases is underestimated [2,7,9]. Parasitic infections lead to delayed mental and physical development in

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children, reduce resistance to infectious and somatic diseases [1], lower the effectiveness of vaccination [3], and cause allergic reactions, inducing secondary immunodeficiencies. Under the influence of helminths and protozoa, homeostasis is disrupted in the body, leading to pathological and immunopathological processes that have an adaptive nature.

Materials and Methods

The study presents an analysis of the results of dynamic observation of 120 children aged 5 to 14 years with central nervous system (CNS) intoxication due to giardiasis and hymenolepiasis infestation. A thorough selection process was conducted to exclude the likelihood of long-term consequences of negative perinatal factors, past traumatic brain injuries, infectious and viral diseases with high fever, which could result in CNS damage and autonomic disorders. In cases of chronic infection, differential diagnosis of potential neurological complications was performed, ensuring compensation of the process during the study period. Based on coproparasitological findings confirming the presence of protozoal and helminthic infestations, the examined children were divided into two groups.

The first group (main group) included 70 children (58.3%) with a combined infestation of giardiasis and hymenolepiasis, with an average age of 9.7±0.35 years. The second group (comparison group) consisted of 50 children (41.7%) infected with giardiasis in isolated form, with an average age of 9.2±0.6 years.

Results and Discussion

The primary complaints of patients and the main reason for seeking medical attention were not the clinical signs of infestations but rather astheno-neurotic complaints (48.4%), convulsive syndrome (30.8%), and tic hyperkinesis (20.8%). Clinical manifestations of the combined infestation of hymenolepiasis and giardiasis represented a combination of symptoms of each infection. In children from the main

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group, hymenolepiasis symptoms were significantly predominant, whereas in the comparison group, giardiasis symptoms were more pronounced. Notably, in our study, signs of CNS involvement were more dominant than the clinical symptoms of parasitic infections.

In most cases, convulsive syndrome was observed in the main group (37; 52.9%), whereas it was absent in the comparison group (P<0.001). In the comparison group, vegetative-vascular dystonia (VVD) was predominant, occurring in 43 children (86%) compared to 15 (21.4%) in the main group (P<0.001). Tic hyperkinesis was recorded in both groups but was significantly more frequent in the main group (18; 25.7±3.2% vs. 7; 14±4.9%; P<0.05). The frequency of complaints related to autonomic dysfunction in children from the main group was significantly higher compared to the comparison group (P<0.01). However, some specific complaints, such as fainting (5.7±2.8%; P<0.001) and hypersalivation (80±4.9%; P<0.001), were unique to hymenolepiasis infestations.

Signs of asthenization were more pronounced in the comparison group, which is associated with the toxic effects of Giardia on the child's body, whereas in the combined form with hymenolepiasis, these signs were less severe. In the neurological status of children with combined infestation, diffuse microsymptomatology was observed, including a uniform increase in tendon reflexes (55; 78.6±4.9%), eyelid and finger tremors in outstretched hands (31; 44.3±5.9%), fibrillar tongue twitches (26; 37.1±5.8%), pathological dermographism, deviations in autonomic tone, and abnormal results in orthostatic and clinostatic tests, as well as the Danini-Aschner test, indicating sympathetic predominance.

According to the results of all diagnostic tests, the pathogenesis of autonomic dysfunction syndrome (ADS) was primarily due to parasitic intoxication, which led to dysfunction of the autonomic centers in the hypothalamic region. This resulted in sympathetic predominance and a persistent course of the condition.

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Conclusions

1. CNS damage due to parasitic intoxication in children with helminthic and protozoal infestations manifested as convulsive syndrome (52.9±5.9%), tic hyperkinesis (25.7±5.2%), and autonomic dysfunction syndrome (ADS) (21.4±4.9%), whereas in children with isolated giardiasis, these manifestations appeared as tic hyperkinesis (14±4.9%) and ADS (86±4.9%).
2. In cases of combined giardiasis and hymenolepiasis, neurological complications were accompanied by a sympathetic orientation of tone and reactivity, with a higher severity score for ADS. In children with isolated giardiasis, neurological complications were mostly associated with parasympathetic predominance.
3. The formation of secondary immunodeficiency was primarily due to the suppression of T-helper and suppressor components, as well as B-lymphocytes, with more pronounced effects in children with a combined infestation of giardiasis and hymenolepiasis.

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