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EPIDEMIOLOGICAL ASPECTS HYMENOLEPIASIS AMONG CHILDREN BUKHARA

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SUMMARU The data showed that the proportion of hymenolepiasis in different age groups of children about the same and vary from 19,0 ± 3,9 to 31,4 ± 7,8 %. In this rather alarming high rate among children aged less than 4 years (19,0 ± 3,9 %). Indicators symptomatic clinical form hymenolepiasis a^ had severe confinement and age ranged from 21,5 ± 5,1 to 30,8 ± 5,7 %, with subclinical form hymenolepiasis ranged from 12,3 ± 5,5 to 31,4 ± 7,8. Symptoms such as regular acute abdominal pain due to trauma of the mucous membrane of the intestinal wall hooks embedded parasite, subfebrile body temperature (usually marked increase to 37,5°, at least until 38,0°), moderately expressed normal and hypochromic anemia (marked reduction hemoglobin in the blood to 100 g / l or less), moderate enlargement of the liver pr., observed with high frequency in many children - up to 65,7 ± 8,1; 83,1 ± 4,7 %.

Key words: hymenolepiasis, helminthiasis, children

Relevance

Hymenolepiasis is one of the most widespread helminth infections in humans and represents a significant public health concern due to the inadequacy of preventive health measures. Currently, there are no scientifically validated prevention strategies for this disease [1, 2, 3, 9]. The contagious nature of hymenolepiasis makes it difficult to control, and even in relatively hygienic environments, it remains widely prevalent.

A general decline in immune status among children, combined with the increasing resistance of pathogens to anthelmintics, has contributed to changes in the clinical

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presentation of hymenolepiasis [4, 5, 6, 7, 8]. Some symptoms become less pronounced or disappear altogether, while new ones emerge [11]. This evolution in symptomatology complicates timely and accurate clinical diagnosis, making it particularly challenging for practitioners to differentiate between the primary forms of hymenolepiasis [10].

Given these concerns, our study aimed to analyze the clinical forms of hymenolepiasis among the pediatric population of Bukhara [12].

Materials and Methods

The study was conducted among 65 children with manifest and 35 children with subclinical forms of hymenolepiasis, aged 4–15 years, who were identified through parasitological examinations in preschool institutions in Bukhara. Multiple observations, detailed interviews with children and their parents, and clinical assessments were used to record the symptoms of different forms of hymenolepiasis.

Diagnosis was performed using the coproovoscopy method, with stool samples collected three times at intervals of 2–3 weeks due to the developmental cycle of the dwarf tapeworm. Fresh morning stool samples were required for examination. Statistical analysis was carried out using Microsoft Excel, with data formatted according to the study's requirements.

Results and Discussion

Age distribution is often used as an indicator of the quality of medical care for parasitic infections in children. Following this approach, we categorized the affected children into different age groups.

However, statistical data from outpatient records were found to be insufficiently informative, as they did not reflect the true prevalence of hymenolepiasis among

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children. A thorough clinical-parasitological examination was therefore conducted, and the findings are presented in Table 2.

No clear age-related patterns were observed in the prevalence rates of hymenolepiasis, which ranged from 19.0 ± 3.9% to 31.4 ± 7.8% across different age groups ($\chi^2 = 2.50$; $p > 0.05$). Notably, the relatively high prevalence among children under 4 years of age (19.0 ± 3.9%) is concerning, as it suggests a strong role for contact transmission.

The prevalence of the manifest clinical form of hymenolepiasis also showed no significant age dependence, fluctuating between 21.5 ± 5.1% and 30.8 ± 5.7% ($\chi^2 = 3.36$; $p > 0.05$). This form was expected to increase with age due to cumulative parasite exposure, yet a surprisingly high rate was observed in children under 4 years old (21.5 ± 5.1%). The same was true for the subclinical form, which varied between 12.3 ± 5.5% and 31.4 ± 7.8% ($\chi^2 = 0.36$; $p > 0.05$). These findings highlight significant gaps in the diagnosis of hymenolepiasis, especially in differentiating its clinical forms.

Overall, the state of helminthological care for children can be considered satisfactory. However, the low rate of medical consultations and the preference for home treatment are alarming. Another concerning issue is the increasing trend of parents attempting self-treatment for helminth infections. Only after repeated unsuccessful attempts do they seek medical help, as reported by outpatient clinics.

Both objective and subjective clinical symptoms play an important role in diagnosing hymenolepiasis. Symptoms such as recurrent acute abdominal pain (caused by the parasite's hooks damaging the intestinal mucosa), low-grade fever (typically 37.5°C, occasionally reaching 38.0°C), mild-to-moderate normochromic and hypochromic anemia (hemoglobin levels below 100 g/L), and slight liver enlargement were observed in 65.7 ± 8.1% to 83.1 ± 4.7% of affected children ($\chi^2 = 3.87$; $p < 0.05$). Since these symptoms are accessible to parasitologists, a careful examination should facilitate accurate diagnosis without major difficulties.

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Additional symptoms, categorized in Table 2, help differentiate between the clinical forms of hymenolepiasis.

In manifest cases, epileptiform seizures, frequent diarrhea with blood, and dysbiosis were reported in 67.7 ± 4.8% to 87.7 ± 4.1% of children ($\chi^2 = 7.50$; $p < 0.01$). These symptoms were significantly less common in the subclinical form ($\chi^2 = 7.16$; $p < 0.01$) and, therefore, have limited diagnostic value for this group (8.6 ± 4.8% to 40.0 ± 8.4%; $\chi^2 = 9.40$; $p < 0.01$).

Other common symptoms in the manifest form included astheno-neurotic syndrome (general weakness, headaches, dizziness), which affected 41.5 ± 6.2% to 55.4 ± 6.2% of children ($\chi^2 = 2.49$; $p > 0.05$). This syndrome was significantly less common in the subclinical form ($\chi^2 = 0.86$; $p > 0.05$), with a prevalence ranging from 17.1 ± 6.5% to 34.3 ± 8.1% ($\chi^2 = 1.14$; $p > 0.05$).

Certain symptoms were more specific to the subclinical form, such as weight loss, skin itching, loss of appetite, and irregular bowel movements, which were observed in 60.0 ± 8.4% to 91.4 ± 4.8% of cases ($\chi^2 = 9.40$; $p < 0.01$). These symptoms were much less frequent in the manifest form and were therefore of limited diagnostic value ($\chi^2 = 7.16$; $p < 0.01$), occurring in only 9.2 ± 3.6% to 32.3 ± 5.8% of cases ($\chi^2 = 10.52$; $p < 0.01$).

One of the most common objective symptoms in the subclinical form was abdominal spasms, characterized by sharp intermittent pain or constant dull aching, affecting 94.3 ± 4.0% of children.

Conclusion

The identified symptoms of hymenolepiasis clearly demonstrate the systemic nature of this parasitic invasion and its pathogenic effects on various organs and systems. Recent literature confirms that the high prevalence of hymenolepiasis and its

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pronounced pathogenicity are linked to weakened immune defenses and reduced nonspecific protective functions in children.

Timely and accurate diagnosis of helminth infections, including hymenolepiasis, is crucial, as early treatment leads to better therapeutic outcomes. Even more important is the prompt differentiation of its clinical forms. While advanced stages of the subclinical form can be treated effectively with well-selected anthelmintic agents, severe cases of the manifest form pose a serious health threat and are difficult to manage.

Therefore, practicing parasitologists must be equipped with accessible and objective diagnostic criteria to accurately identify not only the presence of helminthiasis in children but also its clinical form, whether in outpatient or home settings. Prompt treatment should begin immediately, and severe cases should be referred to specialized pediatric hospitals.

Additionally, parasitological services at the outpatient level should adopt a proactive preventive approach. Our experience suggests that regular visits to local childcare institutions can help identify a significant number of undiagnosed helminth cases among children who have not yet sought medical attention.

This strategy is particularly effective because most children under 7 years old attend preschool institutions, and nearly all children aged 7–15 years are in school. Moreover, during these visits, health workers can engage parents in health education efforts, encouraging them to bring even seemingly healthy children for parasitological examinations.

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