# MICROELEMENT IMBALANCES IN INTESTINAL HELMINTHIASIS

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**Relevance of the topic.** Helminths compete with the host for essential micronutrients such as iron, zinc, copper, selenium, and magnesium, and may also impair their absorption in the intestine. Microelement deficiencies contribute to anemia, growth retardation, cognitive impairment, and reduced resistance to infections. Despite the clinical importance of these disturbances, microelement imbalances in intestinal helminthiasis remain insufficiently studied, and approaches to their correction are not standardized.

**Materials and Methods.** Patients with chronic systemic diseases, acute infections, or conditions affecting mineral metabolism were excluded from the study. Clinical evaluation included assessment of gastrointestinal symptoms, general condition, and nutritional status. Laboratory investigations involved determination of serum microelement levels, including iron, zinc, copper, selenium, and magnesium, using standardized biochemical methods. Hematological parameters, such as hemoglobin concentration and red blood cell indices, were also analyzed. All patients received standard anthelmintic therapy according to current clinical guidelines. To improve correction of microelement disturbances, patients were additionally prescribed individualized microelement supplementation based on detected deficiencies. Follow-up laboratory assessments were performed after completion of therapy to evaluate the effectiveness of the correction. Statistical analysis was conducted using standard methods. Quantitative data were expressed as mean

± standard deviation, and differences were considered statistically significant at $p < 0.05$.

**Results.** Patients with intestinal helminthiasis demonstrated significant microelement imbalances compared to the control group. The most pronounced deficiencies were observed for iron and zinc, which were detected in the majority of patients. Reduced levels of selenium and magnesium were also frequently identified, while copper deficiency was less common. Microelement disturbances were more severe in patients with prolonged infection and higher parasitic burden. Iron deficiency was closely associated with decreased hemoglobin levels and signs of anemia, whereas zinc deficiency correlated with asthenic symptoms and reduced immune resistance.

**Conclusion.** Intestinal helminthiasis is accompanied by significant microelement imbalances, most commonly involving iron, zinc, selenium, and magnesium. Comprehensive treatment that combines anthelmintic therapy with targeted microelement supplementation leads to more effective correction of these disturbances and improves clinical outcomes. Assessment and correction of microelement status should be considered an essential component of the management of patients with intestinal helminthiasis.

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