



**THE STATE OF LOCAL ORAL IMMUNITY IN CHILDREN WITH JUVENILE
RHEUMATOID ARTHRITIS**

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Abstract: The development of interdisciplinary collaboration between dentists and physicians of other specialties is a pressing issue in modern medicine. A pathogenetic link has been scientifically proven between systemic diseases — including juvenile rheumatoid arthritis (JRA) — and periodontitis and diseases of the oral mucosa. This necessitates a joint professional approach by specialists of different profiles to the comprehensive treatment of patients with combined pathology.

Key words: Juvenile Rheumatoid Arthritis, children, local oral Immunity, oral cavity.

Relevance of the Topic

Children with JRA exhibit disturbances in local oral immunity, manifesting as an increased risk of dental diseases such as caries, pulpitis, gingivitis, periodontitis, and ulcers. These complications are associated with the systemic autoimmune nature of the disease, which affects the entire body, including the oral mucosa [3-5]. According to foreign authors, the incidence of musculoskeletal and connective-tissue diseases has increased several-fold in recent years [1-2]. Rheumatic diseases are becoming more common in younger age groups. Studies of the maxillofacial region in patients with rheumatic diseases have shown that the prevalence of dental pathology reaches 95–100% [3,6-7].

Juvenile rheumatoid arthritis (JRA) is a chronic inflammatory joint disease of unclear etiology with a complex, predominantly autoimmune pathogenesis. It leads to progressive joint destruction and, in some patients, is accompanied by pronounced extra-articular manifestations [1-8]. In severe systemic forms of JRA, the heart, lungs, kidneys, and eyes may be affected. Two main forms are distinguished: predominantly articular and systemic. The clinical picture of JRA is diverse and depends on the child's age, sex, triggering factors, and the nature of disease progression [4,5].

Aim of the study: to evaluate the influence of changes in the immune composition of mixed saliva on the condition of oral cavity in children with juvenile rheumatoid arthritis.

Materials and Methods. The study was conducted from 2023 to 2025 at the Department of Child Diseases in Family Medicine, based at the clinic of Tashkent State Medical University. A total of 67 children aged 3–18 years with JRA were examined: 27 with the systemic form and 40 with the articular form. The control group consisted of 47 children of the same age examined at the children's dental clinic. The examination included a set of objective indicators characterizing the condition of teeth and peri-dental tissues. Caries intensity was assessed using the DMF index;



oral hygiene and periodontal tissue status were evaluated using the PMA index. To assess local immunity function, the main classes of immunoglobulins were measured in mixed saliva using the radial immunodiffusion method in agar (Mancini method).

Results and Discussion. Examination of hard dental tissues in children with JRA revealed caries in 100% of cases. In all age groups, caries intensity was high or very high. The mean DMF-t (teeth) and DMF-s (surfaces) indices were significantly higher in the systemic form than in the articular form ($p < 0.001$). Oral hygiene assessment showed: satisfactory – 15%, poor – 40% and very poor – 45%.

Such low hygiene levels are explained by prolonged hospitalization, lack of supervision, severe general condition (fever, weakness, fatigue), limited mouth opening, temporomandibular joint arthritis, and intense pain during stomatitis or gingivitis. Abundant soft plaque and mineralized deposits were observed. Poor hygiene contributed to chronic catarrhal gingivitis in 64% of children. Periodontal tissue damage resulted not only from inadequate hygiene but also from the autoimmune inflammatory mechanisms triggered by the underlying disease. Salivary immunoglobulin analysis revealed significantly lower levels of IgG and sIgA. Reduced sIgA was found in 57% of patients; elevated sIgA occurred only in the presence of multiple chronic infection foci and inflammatory changes in the mucosa and periodontium. At initial examination, 88% of children with JRA had significantly lower salivary IgA levels.

Conclusions. Local immunity reflects overall immunological reactivity at the level of mucous membranes through local antibody production. In children with JRA: caries intensity and prevalence are 100%; inflammatory periodontal diseases develop against the background of reduced secretory IgA concentration.

Thus, in systemic autoimmune diseases such as JRA, local oral immunity is impaired, serving as a key factor in the development of dental caries, multiple focal enamel demineralization, and inflammatory diseases of the periodontium and oral mucosa.

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