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**SALIVARY FRAP/CREATININE RATIO AS A FIRST NON-INVASIVE BIOMARKER
OF CHRONIC KIDNEY DISEASE IN CHILDREN**

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Relevance. Laboratory biochemical tests are an axled element of modern diagnostics of systemic diseases. Nevertheless, commonly applied methods do not allow for early and non-invasive diagnosis of chronic kidney disease (CKD). Saliva is increasingly used as a diagnostic material in laboratory medicine. Painless and easy saliva collection confirms the validity of searching for CKD biomarkers in this biological material.

Target: the study aimed to assess the total antioxidant potential of saliva in children with CKD and patients with other metabolic diseases (hypertension and obesity) and a control group matched by age and gender.

Material and methods. The study included 30 children with CKD and 30 children with hypertension and obesity treated in the Department of Paediatrics and Nephrology of the Medical University of Białystok. Unstimulated and stimulated saliva, plasma, and urine were collected from all patients, and total antioxidant potential (FRAP - ferric ion reducing antioxidant power) and classic markers of kidney damage were assessed. The concentration of salivary FRAP was standardized for total protein content and creatinine. The data was statistically analyzed using parametric tests.

Results and their discussion. Salivary FRAP with high sensitivity and specificity distinguishes children with mild/moderate renal insufficiency from severe CKD. However, this parameter does not differentiate CKD patients from other metabolic diseases. The FRAP/creatinine ratio in stimulated saliva, in turn, distinguishes children with chronic kidney disease from healthy people and also from patients with arterial hypertension and obesity. The FRAP/creatinine ratio in saliva also correlates with classical biomarkers of kidney damage.

Conclusions. The total antioxidant potential of saliva and the FRAP/creatinine ratio may be early and non-invasive biomarkers of CKD in children. The low cost, speed, repeatability, and reproducibility of the FRAP method prove the validity of developing salivary laboratory tests to diagnose kidney failure in children.