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Epidemiological profile of pediatric urolithiasis in Kazakhstan**Assel Sagymbayeva**^{1,2}¹Department of Pediatric Surgery, Asfendiyarov Kazakh National Medical University, Almaty, Kazakhstan²Pediatric Urology Department, Scientific Center of Pediatrics and Pediatric Surgery, Almaty, Kazakhstan

Recent studies have shown that urolithiasis is becoming increasingly widespread around the world. However, there are no studies assessing the prevalence of urolithiasis in children in Kazakhstan over the last 20 years.

Objective: To describe the epidemiological profile of pediatric patients with urolithiasis in the Pediatric Urology Department of the Scientific Center of Pediatrics and Pediatric surgery in Almaty, Kazakhstan.

Methods: Data from pediatric patients (age: 1 month – 17 years) with urolithiasis admitted from January 2015 to December 2021 were reviewed from hospital charts. The studied variables were: demographic and anthropometric data, clinical status, family history of urolithiasis, urinary tract infection, diagnostic procedures, associated abnormalities, metabolic disorders, treatment. Statistical analysis was performed using StatTech v.2.6.1 Quantitative variables following non normal distribution were described using median (Me) and interquartile range (IQR) (Q1 – Q3). The statistical significance level adopted was $p < 0.05$.

Results: The study group consisted of 204 children with a median age at onset of symptoms 7 years. Main characteristics of the patients: male gender, aged between 7 and 17 years, family history of urolithiasis (39.7%), previous urinary infection (90.7%). Abdominal pain, renal colic and macroscopic hematuria were the most common complaints.

The most frequent metabolic disorders were hyperoxaluria (12,3%) and hypercalciuria (8,8%). Abdomen/urinary tract ultrasonography was the most commonly used diagnostic test.

Hydronephrosis occurred in 50.5% of the cases, 74% of the stones were in the kidneys, and bilateral stones were associated to a family history of urolithiasis ($p=0.030$). Recurrence rate was 30.3% (most patients had a metabolic disorder).

When comparing of metabolic disorders depending on gender there were no statistically significant differences ($p = 0.294$). So, comparing of metabolic disorders statistically significant differences were revealed depending on age groups ($p = 0.015$). In 22.5%, the patients were conservative treated, 25% were surgically treated (mainly pyelolithotomy), and only 65,2% had their stones analyzed (calcium oxalate was the main finding in the examined stones).

Conclusions: The frequency of pediatric urolithiasis and clinical profile this patients were similar to that reported by the world literature. A metabolic evaluation is required and the composition of stones (stone analyses) should be better evaluated.