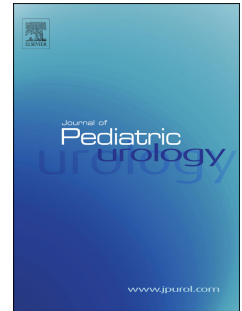


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24 hour urine metabolic differences between solitary and recurrent stone formers: results of the Collaboration on Urolithiasis in Pediatrics (CUP) working group

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Collaboration on Urolithiasis in Pediatrics (CUP) Working Group

Summary Introduction: Specific factors associated with the risk of developing pediatric urinary stone disease remain unclear, especially those that may be associated with recurrent stone disease.

Objective: We compared the results of 24-hour urine collections in children with a solitary stone episode to those with recurrent stone episodes to determine if there is a difference that may be associated with recurrent stone formation in children.

Study design: A multi-institutional retrospective analysis was completed to assess 24-hour urinary metabolic profiles in children with urolithiasis aged 2–18 years old. Differences in mean urine collections between the two groups were assessed using chi-square tests to test the associations among gender, stone type, and recurrence status, as well as multivariate analyses using general linear models.

Results: We analyzed 142 solitary stone patients and 136 recurrent stone patients from four centers were included. Recurrent stone patients were older than solitary stone patients (mean 13.4 ± 3.6 years vs. 12 ± 3.9 years, $p=0.002$). Females were more likely to have recurrent stones (58% vs. 39%, $p=0.002$). BMI was not associated with recurrence ($p=0.8467$). Recurrent stone formers had lower urine volumes, although this did not reach statistical significance when compared with solitary stone formation ($20.4 \text{ mL/kg/day} \pm 11.5$ vs. 22.9 ± 13.0 , $p = 0.0880$). Higher values for super-saturation of calcium oxalate were associated with recurrent stone disease in univariate ($p=0.0485$) and multivariate analysis ($p=0.0469$) (Figure). Centers located in the Southeast of the United States saw a higher

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