

24-Hour Urine Collection for Pediatric Stone Formers: Is it worth it?

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INTRODUCTION

- 24-hour urine collections are recommended for motivated first-time stone formers. Given that children have a lifetime for potential recurrences, metabolic work-up has been recommended.
- 24-hour urine collections can be problematic, especially in children
- Aim: We sought to study the benefits of 24-hour urine collections in children with stones

METHODS

- We performed a single center, retrospective chart review of all pediatric nephrolithiasis patients <18 years of age at our institution who supplied a 24-hour urine collection between 8/2000 - 10/2018
- We assessed:
 - Whether 24-hour urine results lead to a change in management
 - If these patients were adherent to the recommendations



RESULTS

- 70 peds stone patients who had 24hr urine collection reviewed
- Recommendations other than dietary/fluid intake in 8/70 (11%)
 - 1 placed on dietary dairy/calcium restriction
 - 2 prescribed hydrochlorothiazide
 - 7 prescribed potassium citrate.
- Predictors of additional recommendations:
 - Low citrate/calcium ratio (327 vs. 525, $p < 0.03$)
 - Test ordered by nephrology vs. urology (26% vs. 2%, $p < 0.003$)

RESULTS

- Of the 8 patients where changes were recommended:
 - 1/8 had a repeated 24-hour urine collection
 - 3/8 never followed up
 - 2/8 stopped medicines prior to follow up
- 55% of studies incorrectly collected
- Total costs estimated between \$9800 (Medicaid) and \$28000 (out of pocket)



Study Totals	
24-hour urine studies	429
Inadequate records	231/429
Follow-up/repeat studies	60/429
Reasons other than nephrolithiasis	68/429
<i>Total included</i>	70/429
Inadequate collections	39/70 (55%)
Abnormalities found	70/70 (100%)
Recommendations Changed Group	8/70 (11%)
Pediatric nephrology	7/8 (88%)
Urology	1/8 (12%)
Compliance with Changes	
Lost to follow-up	3/8 (38%)
Stopped medicines	3/8 (38%)
Continued changes	2/8 (25%)
Estimated Costs	
Out-of-pocket	\$28,000
Medicaid	\$9,800

CONCLUSION

- 24-hour urine collection for first time pediatric stone formers is expensive, difficulty to accomplish and infrequently leads to treatment changes.
- Our data suggest it is unnecessary.



Thank You