


Acidification of 24-hour urine in urolithiasis risk testing: An obsolete relic?

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Abstract

Background: Recommendations on the optimal preservation of 24 h urine for the metabolic work-up in urolithiasis patients are very heterogeneous. In case two such tests with different storage condition recommendations are being analysed, multiple collections would be needed, challenging especially elderly and very young patients. We therefore aimed to evaluate the stability of urine constituents under different storage conditions.

Material and methods: We collected urine samples from ten healthy volunteers and prepared aliquots to be stored either at room temperature or 4 °C. Some aliquots were preserved using hydrochloric acid prior to storage, some thereafter, some using the BD Urine preservation tube and some were not preserved at all. Storage duration was 0, 24, 48 or 72 h. In all samples calcium, magnesium, phosphorus, creatinine, oxalate, citrate and uric acid were measured and compared to the according reference sample.

Results: We could not find any significant deviation for any of the analytes and preanalytical treatment conditions compared to the associated reference sample.

Conclusion: Preservation of 24 h urine for the metabolic evaluation in stone formers might not be necessary for sample storage up to 72 h.

Keywords: Kidney stone; Metabolic evaluation; Preanalytical phase; Secondary prevention; Stone former patients; Urine preservation.