

Eric Schott, PGY-3; October 2016 - Block 4

THE EFFECT OF WRITTEN POSTED INSTRUCTIONS ON COLLECTION OF CLEAN-CATCH URINE SPECIMENS IN THE EMERGENCY DEPARTMENT

Patrick Joseph Maher, MD, Alisha Emily Cutler Brown, MD, and Medley O'Keefe Gatewood, MD
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Background: Urinalysis is perhaps one of the most common laboratory tests ordered in the acute care setting. Despite it offering the potential to provide a wealth of information, the results are often useless due to suspected contamination. As such, techniques to decrease the overall rate of contamination and increase the utility of such a non-invasive test should be pursued.

Methods: This quasi-experimental, single-center cohort study of ED patients > 18 years old included all English speaking, ambulatory patients who were ordered for UA testing collected by non-observed use of a restroom. A standardized sign outlining patient instructions for Mid-Stream Clean Catch (MSCC) urine collection was posted in English in all ED bathrooms. The study sought to test if contamination of UA samples was less frequent following the placement of written MSCC instructions. ED providers were instructed not to change their indications/frequency of ordering UA testing, and ED staff were allowed to mention the signs, but not provide any additional verbal instruction regarding MSCC than their usual practice. A total of 754 urine samples were included in the study over a period of 3 months. Contamination was defined by the presence of SECs > 5 cells or by a culture standard as growth of pathogenic bacteria (gram-negative bacilli, Staphylococcus aureus or Staphylococcus saprophyticus) at < 10,000 CFU or a nonpathogenic organism (e.g., Lactobacillus) at any CFU.

Results: During the study period, 52% of samples were found to be contaminated, as compared to 50% contamination of a similar cohort taken from patient data from the prior year. This was not found to be statistically different. Furthermore, there was no difference between the groups when differentiated between microscopy vs. culture standards.

Analysis: As simple, cost-effective and non-invasive as the UA is, it is a shame that the results are so oftentimes unhelpful due to suspected contamination. Despite the lack of academic rigor displayed in this study (lack of randomization, binding, varying verbal instruction from ED staff and placement of bathroom signs, etc.) this does attempt to provide some useful objective feedback following a low-tech, realistic tool to increase the utility of this test. Perhaps additional modifications (standardizing placement of signs, attempts to improve the receipt of verbal instructions from staff, etc.) could be employed with a similar review of the results. It's important to note that the utility of a UA is not solely to evaluate for evidence of infection, and there is benefit of the test despite the evidence of contamination.
