

The Uri-test, a novel urine specimen collecting device that significantly reduces the rate of false-positive urine culture results in asymptomatic female patients (Pilot Study).

Fernandez, Benidecto, MD

Abstract

Introduction:

Obtaining an accurate, mid-stream, clean-catch, urine specimen, in female individuals, is difficult and contamination is a common occurrence. It would be useful if women could have a vehicle by which urine collection is made easier while reducing the risk of contamination.

Objective:

This study was designed to demonstrate that by using a simple urine-specimen collection system, the Uri-test, there is an important reduction in the rate of false-positive culture results, and a noteworthy reduction in the cost of running routine urine tests in the outpatient setting.

Methods:

One hundred sixty female patients from the ages of 41–89 years old, presenting to an outpatient office setting for routine follow-up visits, were screened for asymptomatic urinary tract infections. A urine specimen was considered infected if the white cell count (WBC) was greater than 10 per high-power field (HPF). Specimens meeting these criteria were sent for urine culture.

Results:

Of the 160 female patients tested, 17 specimens (10.6%) were noted to have greater than 10 WBC's/HPF. These specimens were subsequently cultured. The cultures showed E.coli (35.3%), enterococcus (47%) and S.agalactiae (5.9%), all growing greater than 100,000 CFU. Two of the samples (11.8%) showed no growth. None of the specimens grew multiple organisms.

Conclusion:

The test results achieved in this Pilot study are encouraging as none of the specimens collected showed any signs of contamination. The current medium rate of contaminated urinary specimens is 15%. The Uri-test is an easy, reliable method of collecting urine specimens. By limiting the need for repeated testing, the insignificant cost of this device is well justified.

Introduction

Obtaining an accurate, mid-stream, clean-catch, urine specimen, in female individuals, is difficult and contamination is a common occurrence. (1,2,5) Antibiotic treatment of such specimens is often misguided and ineffective, frequently leading to repeat testing and unnecessary costs to laboratories and third-party payers.(7) As a result, a specimen-collecting device, the Uri-test, was designed by Dr. Benidecto Fernandez, president of Uritech Corp., in order to improve the accuracy and cost of such routine urine testing. In this pilot study, we demonstrate that the use of this unique urine specimen-collecting system is simple, cost-effective and it increases the accuracy of urine culture results.

Objective

This study was designed to demonstrate that by using a simple urine-specimen collection system, the Uri-test, there is an important reduction in the rate of false-positive culture results, and a noteworthy reduction in the cost of running routine urine tests in the outpatient setting.

Methods

One hundred sixty female patients from the ages of 41–89 years old, presenting to an outpatient office setting for routine follow-up visits, were screened for asymptomatic urinary tract infections. Collecting the urine specimen was relatively easy. Women assemble the collection kit by connecting a tube and coupling piece with the funnel. Patients cleanse with a Castile soap wipe to sterilize the female urethra and surrounding tissue. While in a standing position, a woman places the urinary funnel in close proximity to the urethral orifice. Patients undergoing this test are asked to discard the first voided urine, and proceed to collect the necessary amount of specimen by engaging the funnel with the urinalysis tube coupling. Once an adequate amount of urine has been collected, the patient can disconnect the kit and complete emptying their bladder while maintaining the urinary funnel in place. A urine specimen was considered infected if the white cell count (WBC) was greater than 10 per high-power field (HPF).(3,4) Specimens meeting these criteria were sent for urine culture.

Results

Of the 160 female patients tested, 17 specimens (10.6%) were noted to have greater than 10 WBC's/HPF. These specimens were subsequently cultured. The cultures grew E.coli (35.3%), enterococcus (47%) and S.agalactiae (5.9%), all greater than 100,000 CFU.(6) Two of the samples (11.8%) showed no growth. None of the specimens grew multiple organisms.(1–2)

Discussion

This pilot study was conducted to see if using this unique urine specimen-collection device was more efficacious than the traditional methods currently employed. The present methodology required of women to obtain an adequate specimen is awkward and unreliable as it is frequently contaminated.(5)

Of the 160 female subjects entering the study, 17 specimens were found to have pyuria greater than 10 WBC/HPF.(3,4) Eighty-eight percent of the specimens grew a common urinary pathogen including E.coli, S.agalactiae, and enterococcus.(8) All of the positive results grew greater than 100,000 CFU. None of the specimens had a polymicrobial result. ▶

Discussion

Women utilizing the Uri-test found this process to be simple and comfortable when compared to currently employed methods. The Uri-test is a biodegradable, disposable, urinary funnel with a tube coupling that fits standard laboratory test tubes.

The test results achieved in this Pilot study are encouraging as none of the specimens collected showed any signs of contamination. The current medium rate of contaminated urinary specimens quoted in the literature is 15%.^(1,2) Such false-positive results are often followed by a misguided choice of antibiotics, which may be unsuccessful in clearing the existing infection.⁽⁶⁾ With the current costs of healthcare on the rise, any laboratory testing that minimizes inaccurate results is certainly welcomed.

Today, laboratory facilities, hospitals and healthcare providers alike are under extreme pressure to provide the most cost-effective care possible.⁽⁷⁾ The Uri-test is an easy, reliable method of collecting urine specimens to successfully treat infections. By limiting the need for repeated testing, the insignificant cost of this device is well justified.

As a result of these preliminary findings, we believe that a large, randomized controlled trial should be performed to further examine the Uri-test's potential to increase the accuracy of urinary testing and reduce the ultimate cost of treating these common infections.

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