Sir,

While opportunistic infections in human immunodeficiency virus (HIV) infected individuals are extensively studied, very limited data are available on urinary tract infections (UTIs) in HIV patients. We evaluated the usefulness of rapid urine dipstick tests and microscopy for detecting bacteriuria against urine culture in HIV setting and investigated if these rapid screening tests could replace urine culture, thereby, reducing the costs and time for laboratory diagnosis.

A total of 550 HIV-infected individuals presenting with symptoms of UTI from January 2011 to December 2014, were included. Since the data were retrospectively analyzed from laboratory records, we did not seek any IRB approval. Moreover, this study does not link any patient identification details in the analysis or elsewhere. Each subject had submitted a fresh, random mid-stream urine specimen. A dipstick-based urinalysis (Multiple Reagent Strips for Urinalysis, Siemens, NY, USA) was immediately performed to detect leukocyte esterase (LE) and nitrite (NIT). Microscopy for pyuria was also performed on centrifuged urine specimens. Semiquantitative urine culture was performed, and the significant bacterial isolates were identified by standard procedures. Urinalysis results were correlated with results of urine cultures and performance characteristics of urinalysis tests were evaluated.

The results of the present study expand the previous findings in other non-HIV study populations that the performance of the rapid screening dipstick urinalysis tests as compared with the culture results is relatively poor. Although these rapid tests allow HIV-infected individuals to be screened and treated in the same visit, the decreased sensitivity of dipstick tests in detecting significant bacteriuria limits the diagnostic utility in HIV clinical care settings. Albeit being 3-fold more expensive and requiring multiple visits to clinic, the urine culture results with antibiogram ensure targeted therapy thereby eliminating the risks of indiscriminate antibiotics usage. Hence, the results of rapid dipstick urinalysis tests might not be sufficient enough to replace the conventional urine culture method, and the clinical decision is to be made only based on the culture and sensitivity results among the HIV-infected patients.

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Nil.

Conflicts of interest
There are no conflicts of interest.

Table 1: Performance of the leukocyte esterase, nitrite and microscopy urinalysis tests in screening for significant bacteriuria among human immunodeficiency virus infected subjects

| Screening test                        | Sensitivity (%) | Specificity (%) | Positive predictive value (%) | Negative predictive value (%) |
|---------------------------------------|-----------------|-----------------|-------------------------------|-----------------------------|
| LE                                    | 77.5            | 68.5            | 35.9                          | 93                          |
| NIT                                   | 30.4            | 99.6            | 93.9                          | 86.3                        |
| Microscopy for pyuria (>5 pus/HPF)    | 52.5            | 92.2            | 60.2                          | 89.6                        |
| LE + NIT                              | 57.4            | 99.7            | 96.9                          | 93                          |
| LE + NIT + microscopy                 | 53.3            | 99.7            | 96                            | 93.5                        |

LE=Leukocyte esterase; NIT=Nitrite; HPF=High-power field
Ramachandran Vignesh1,2, Chinnamedu R Swathirajan1, Sunil S Solomon1,4, Suniti Solomon1, Pachamuthu Balakrishnan1
1Infectious Diseases Laboratory, Y.R. Gaitonde Centre for AIDS Research and Education, Chennai, Tamil Nadu, India, 2Laboratory-based Department, Universiti Kuala Lumpur Royal College of Medicine Perak, Ipoh, Malaysia, 3Medical Centre, Y.R. Gaitonde Centre for AIDS Research and Education, Chennai, Tamilnadu, India, 4Department of Infectious Diseases, Johns Hopkins School of Medicine, Baltimore, MD, USA

Address for correspondence: Dr. Pachamuthu Balakrishnan, Infectious Diseases Laboratory, Y.R. Gaitonde Centre for AIDS Research and Education, 2nd Floor, Admin Building, VHS Hospital Campus, Rajiv Gandhi Salai, Taramani, Chennai - 600 113, Tamil Nadu, India. E-mail: bala@yrgcare.org

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