Of the study population, 57.6% were females with mean age of 30.3 years (range, 4–66) and the rest were males with mean age of 38.6 years (range, 1–79). Most infections were due to *Escherichia coli* (10.7%), followed by other members of family *Enterobacteriaceae*, *Staphylococcus aureus* and *Pseudomonas aeruginosa*. Table 1 outlines the performance of the urinalysis tests for detection of significant bacteriuria. A positive urinalysis result (combining the LE, NIT and excluding microscopy) had a sensitivity of 57.4% and a specificity of 99.7%. On further analysis by including only the Gram-positive uropathogens, the LE’s sensitivity and specificity dropped to about 72.2% and 68.5%, respectively. However, sensitivity and specificity of NIT including only the *Enterobacteriaceae* members modestly raised to 36.7% and 99.5%, respectively.

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.

**Acknowledgments**
The authors are grateful to the study participants and the staff at YRG CARE for the support.

**Financial support and sponsorship**
Nil.

**Conflicts of interest**
There are no conflicts of interest.

<table>
<thead>
<tr>
<th>Screening test</th>
<th>Sensitivity (%)</th>
<th>Specificity (%)</th>
<th>Positive predictive value (%)</th>
<th>Negative predictive value (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LE</td>
<td>77.5</td>
<td>68.5</td>
<td>35.9</td>
<td>93</td>
</tr>
<tr>
<td>NIT</td>
<td>30.4</td>
<td>99.6</td>
<td>93.9</td>
<td>86.3</td>
</tr>
<tr>
<td>Microscopy for pyuria (&gt;5 pus/HPF)</td>
<td>52.5</td>
<td>92.2</td>
<td>60.2</td>
<td>89.6</td>
</tr>
<tr>
<td>LE + NIT</td>
<td>57.4</td>
<td>99.7</td>
<td>96.9</td>
<td>93</td>
</tr>
<tr>
<td>LE + NIT + microscopy</td>
<td>53.3</td>
<td>99.7</td>
<td>96</td>
<td>93.5</td>
</tr>
</tbody>
</table>

LE=Leukocyte esterase; NIT=Nitrite; HPF=High-power field

**Table 1: Performance of the leukocyte esterase, nitrite and microscopy urinalysis tests in screening for significant bacteriuria among human immunodeficiency virus infected subjects**
Ramachandran Vignesh¹,², Chinnambedu R Swathirajan¹, Sunil S Solomon¹,³,⁴, 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

REFERENCES


2. Myer’s and Koshi’s Manual of Diagnostic Procedures in Medical Microbiology and Immunology/Serology. Faculty of Department of Clinical Microbiology, Christian Medical College and Hospital, Vellore, India. Kennedy Nagar, Pondicherry, India: All India Press; 2001. p. 31-7.


This is an open access article distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 3.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as the author is credited and the new creations are licensed under the identical terms.