

P1665 Age-specific cut-offs of the Sysmex UF-1000i automated urine analyser for rapid screening of urinary tract infections in outpatientsMi-Kyung Lee^{*1}, Hyunji Kim¹, Hye-Ryoun Kim¹, Tae-Hyoung Kim²¹ Department of Laboratory Medicine, Chung-Ang University College of Medicine, ² Department of Urology, Chung-Ang University College of Medicine

Background: Urinary tract infections (UTIs) are the most common bacterial infection in the world, affecting 150 million people annually. Most UTIs occur in outpatients, and outpatients with UTIs (8.6 million each year) account for most of the outpatients in the United States. UTI prevalence varies among age groups; however, UTI prevalence by age group in Korea has yet to be thoroughly investigated. We investigated the usefulness of age-specific cutoffs for screening for UTIs in Korean outpatients, using the automated urine analyzer UF-1000i (Sysmex, Kobe, Japan).

Materials/methods: We performed a retrospective review of outpatient medical records. Urine samples of 7,443 outpatients from January 2010 to December 2017 were analyzed using urine culture and UF-1000i. ROC curves were calculated for each UF-1000i parameter based on the culture results.

Results: There were 1,398 culture positive samples, 5,774 culture negative samples, and 271 contaminated samples. UF-1000i had an area under the curve of ≥ 0.9 in outpatients > 15 yrs. The appropriate cutoffs, which is the sum of white blood cell and bacterial counts, were 297.10/ μL (15 – 24 yrs), 395.65/ μL (25 – 44 yrs), 135.65/ μL (45 – 64 yrs), 67.95/ μL (65 – 74 yrs), and 96.5/ μL (≥ 75 yrs). Bacterial (B-A-C) and white blood cell (WBC) counts differed among the three most frequently identified bacteria (*Escherichia coli*, *Klebsiella pneumoniae*, and *Enterococcus faecalis*).

Conclusions: The UF-1000i system is useful for applying age-specific cutoffs to screen for UTIs, thereby preventing antibiotic abuse and reducing antibiotic resistance. Future studies can explore how its WBC and B-A-C counts can facilitate selection of empirical antibiotics by distinguishing between gram-positive and gram-negative bacteria.

