

Antibiotic Sensitivity of Uropathogens to First Line Antibiotics: A Laboratory-Based Analysis from a University Hospital in Sri Lanka

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Outpatient treatment of urinary tract infections is compromised due to rapid development of resistance to first line antimicrobials leading to increased healthcare cost. Continuous resistance surveillance is important when making empiric therapy decisions. This study aimed to determine the antibiotic sensitivity rates of uropathogens to first line antibiotics. Urine cultures received to the microbiology laboratory at University Hospital KDU from January to June 2022 were retrospectively analyzed. Of 2626 specimens 431(16.4%) yielded significant bacteriuria. Commonest organism from outpatients were Enterobacterales, (122/150,81.3%) followed by Staphylococcus species (8/150,5.3%), and among inward patients, Enterobacterales (152/227,66.9%), were commonest followed by Candida (33/227, 14.5%) Enterococcus (17/227, 7.4%) and Pseudomonas (8/227, 3.5%) while Candida (31/54, 57.4%) was the commonest among ICU patients. Antibiotic sensitivity of Enterobacterales to first line antibiotics among outpatients, inward and ICU patients were: gentamicin (83.6%,85.6%,40%), nitrofurantoin (78.4%,75%,40%), cefuroxime (76.7%,65.4%,20%), cephalexin (68.5%,58.8%,20%), norfloxacin (67.8%,53.1%,0%), co-trimoxazole (67%,56.8%,0%), co-amoxiclav (66.1%,59.2%,20%), ciprofloxacin (58.5%,42.8%,0%), nalidixic acid (48.2%,38.6%,0%), and amoxicillin (20%,24.2%,20%), respectively. Overall sensitivity of pseudomonas species to ceftazidime (83.3%,50%), gentamicin (83.3%, 25%), norfloxacin (67.7%,25%), ciprofloxacin (66.7%,25%) and were observed in inward and ICU patients while vancomycin resistance was detected as 71.4% and 67% to enterococci respectively. Nitrofurantoin can be considered as a first line oral option for both outpatients and inward patients, but its use is limited to cystitis. Gentamicin is another option to be used as a single agent or in combination, for inpatient treatment or as outpatient parenteral therapy. Effectiveness of many other first line oral antibiotics as step down therapy has become low especially among ICU patients.

Keywords: antibiotic sensitivity, uropathogens, first line antibiotics, Sri Lanka