

Prevalence of Antimicrobial Resistance in Uropathogens among Patients Visiting Primary Health Centers: Implications for Empiric Therapy

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Background: Urinary tract infection (UTI) is one of the most frequent bacterial infections in the community; in the Kingdom of Bahrain, the currently recommended empirical antimicrobial regimen is based on international guidelines but not supported by local data.

Objective: To evaluate the local antibiotics profile of most common urinary pathogens among patients visiting primary health centers.

Design: A Retrospective Analytical Study.

Setting: Primary Health Center, Salmaniya Medical Complex.

Method: All outpatients seeking care in health centers for which the attending physician clinically suspected UTI and asked for the provision of urine culture from June 2016 to June 2017 were included. Mid-stream clean catch urine specimens were obtained from patients suspected clinically to be having UTI based on symptoms.

Mid-stream urine specimens were plated on Cystine-Lactose-Electrolyte-Deficient (CLED) agar plate using calibrated loops for the quantitative method to provide isolated colonies for identification and susceptibility testing.

Result: Total of 1,357 urine samples with significant bacterial growth were obtained; 1,230 (90.6%) were females and 943 (69.5%) were in the age group of 19-64 years. The four most common uropathogens that contributed to 90% of the cases were as follows: 829 (61.1%) *Escherichia coli*, 222 (16.4%) *Klebsiella pneumoniae*, 123 (9.1%) *Streptococcus agalactiae* and 62 (4.6%) *Enterococcus* species.

Eight hundred twenty-nine (61.1%) specimens were *E. coli*; 731 (53.9%) demonstrated low sensitivity levels to cephalothin, and 777 (57.3%) to cotrimoxazole, 887 (65.38%) moderate sensitivity to amoxicillin-clavulanate, and 1,035 (76.3%) to norfloxacin, but 1,284 (94.6%) retained very high sensitivity to nitrofurantoin.

Conclusion: Based on this study, we recommend nitrofurantoin as the first choice of empiric antibiotics therapy for uncomplicated UTI in outpatient setting; despite the good sensitivity profile of fluoroquinolones, we recommend using it only as an alternative or second line. Other suggested therapy which might be proposed for use as possible alternative option is fosfomicin, but after confirming its local sensitivity profile.

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