

Prevalence and Drug Susceptibility Profiles of Bacterial Urinary Tract Infections Isolated among Diabetes Mellitus Patients at Bosaso Health Centers

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Abstract : Background: Urinary Tract Infections (UTIs) are the commonest infections described among diabetes mellitus patients. More often, empirical antimicrobial therapy is initiated before the laboratory results are made available with minimal treatment success. The knowledge of the etiology and antibiotic susceptibility patterns of the organisms causing urinary tract infections among diabetes mellitus patients remains scarce, despite its vitality. This study sought to determine the prevalence, bacteria species, and drug susceptibility patterns of common causes of urinary tract infections among diabetes mellitus patients attending Bosaso health centers. Materials and methods: We conducted a cross-sectional study involving adult diabetic patients at Bosaso health centers between the months of May and July 2020. Laboratory assay of mid-stream urine samples was done to isolate bacteria causes of UTIs. These were biochemically identified using Gram stain, Kligler iron agar (KIA), Indole test, citrate, urea, coagulase, catalase, motility agar, and lysine iron agar. Their antibiotic susceptibility pattern for the isolated organisms was made for Ampicillin 10µg, Ciprofloxacin 5µg, Cotrimoxazole 25µg, Gentamycin 10µg, Ceftriaxone 10µg, and determined using the Kirby Bauer Disc Diffusion method. Results: Of 177 participants, 69 (39.0%) were males and 108 (61.0%) were females. Their mean age was 33.1 years (range; 18-67 years). Of these, 14.7% (26/177) of the samples revealed significant growth ($\geq 10^5$ CFU/mL) giving a prevalence of 14.9 % (95% CI: 10.6 to 16.3). The organisms isolated were Escherichia coli -50% (N=13), Klebsiella pneumonia 30.8% (N=8), Staphylococcus aureus 15.4% (N=4), and unidentified organism 3.8% (N=1), and these were associated with such socio-demographic factors like history of catheterization and sexual activity. Antibiotic susceptibility to the commonly used agents for treating UTIs indicated higher sensitivity to Gentamicin and Ceftriaxone.

Keywords : antimicrobials, bacteria, urinary tract infections, diabetes

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