

Bacterial urinary tract infections (UTIs) are gaining prominence in medical practice due to increasing multi-drug resistance. The management of UTIs is ideally guided by knowledge of local etiological isolates and prevailing antimicrobial susceptibility patterns. However, data on the profile of uropathogenic bacterial agents and prevalence of antimicrobial resistance of the agents is lacking in Kenyatta University. The objective of this study was to determine the etiological bacterial agents of UTIs, within communities in Kenyatta University, and the existing resistance among these isolates to commonly used antimicrobials. A cross-sectional survey research design was adopted. Outpatients with symptoms of UTIs who visited the Kenyatta university health services clinic, from 1st August 2006 to 31st October 2006 were used. The physical (macroscopic) examination of the urine samples and biochemical analysis was performed. The polymorphnuclear neutrophils count of urine sediments was used to determine presence of pyuria. The bacterial agents were isolated using standard microbiological culture methods and identified by colony morphology, gram stain and biochemical tests for metabolic and enzymatic reactions. The susceptibility of the bacterial isolates to ten therapeutic agents was determined using disc diffusion method and their minimum inhibitory concentrations (MICs) determined by broth dilution technique. Plasmid analysis on agarose gel electrophoresis was performed to characterize bacteria strains with linked antimicrobial resistance patterns. This study established that females are particularly prone to have confirmed cases of bacterial UTIs. Eight genera of bacterial etiological agents of UTIs were isolated namely *Escherichia* (61.3%), *Enterobacter* (18.7%), *Citrobacter* (4%), *Klebsiella* (3.3%), *Proteus* (2.1%), *Pseudomonas* (0.1%), *Staphylococcus* (9.3%), and *Streptococcus* (0.7%). The uropathogenic bacteria isolated in this study exhibited varying trends in resistances to various classes of antimicrobial agents Over 70 % of the bacteria isolates were resistant to cotrimoxazole and ampicillin, followed by augmentin (49.3 %) and nalidixic acid at 34.7%. Ceftazidime, nitrofurantoin, gentamicin and norfloxacin had resistance levels of between 2% and 11 %. While 53 % of the *Escherichia coli* strains were non-typable with SPEC sera, four biotypes namely 4, 3 and 2 were identified. The predominant biotype was 4. Twelve distinct resistance phenotypes were exhibited by the *E. coli* isolates with resistance to cotrimoxazole, ampicillin and augmentin being the most prevalent. The cotrimoxazole and ampicillin had high resistance (MIC₉₀ >2000p/ml), for the *E. coli* strains. Most of the *E. coli* isolates harboured plasmids that ranged in molecular weight from 1.8MDa to 98MDa. Resistance to ampicillin, augmentin, tetracycline, sulphamethoxazole and trimethoprim was transferable to *E. coli* K12F⁻ nalidixic acid resistant strain via conjugative plasmids by 71.4% of the bacterial isolates in conjugation experiments. Results from this study offer current antimicrobial resistance patterns of uropathogenic bacterial strains circulating in the Kenyatta University population, allow clinician to choose appropriate cost effective therapeutic agents, and form a basis for evaluation of treatment regimens. Consequently, there is need to reconsider the empirical use of ampicillin and cotrimoxazole in the treatment of bacterial UTIs. Flouroquinolones, cephalosporins, nitrofurantoin or gentamicin are recommended in alternative treatment regime.