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Trend analysis of bacterial uropathogens and their susceptibility pattern: a four-year (2013-2016) study from Aseer region, Saudi Arabia

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Objective: The objective of the study is to analyze the prevalence and resistance rates of bacterial agents causing urinary tract infections (UTIs) in Aseer, Saudi Arabia (2013-2016).

Methods: This was a four year (2013-2016) retrospective study undertaken in Aseer Central Hospital (ACH), Saudi Arabia. A total of 49,779 urine and other UT specimens obtained from patients suspected of having a UTI were analyzed. Urine specimens were inoculated onto CLED agar following standard procedures. Cultures showing significant bacteriuria were subjected to identification and sensitivity testing using VITEK 2 system. Data of patients and uropathogens were assembled, checked and analyzed using SPSS software.

Results: Culture positive samples were 49,779 (59.9% males, 40.1% females; p=0.000). Year trend showed significant variations (p=0.000) and the forecast trend line hypothesized a clear rise. Age groups 70 to 79 years old were the most vulnerable group (22.3%). Gram negative bacilli were 91.8% and the major species were *Escherichia coli* (39.7%), *Klebsiella pneumoniae 15.8%, Pseudomonas aeruginosa* 13.8%, *Proteus mirabilis* 10.6% and *Acinetobacter baumannii* 5%. Antimicrobials with high sensitivity rate were linezolid (99.1%), daptomycin (89.3%), vancomycin (86.7%), teicoplanin (85.5%), ertapenem (85.1%), fosfomycin (82.1%) and tigecycline (80.2%). High resistant rates to uropathogens were encountered with cephalothin (89.8%), nalidixic acid (86.7%) and ampicillin (81.9%).

Conclusions: The majority of uropathogens were resistant to antibiotics commonly used in clinical practice. Linezolid, daptomycin and vancomycin showed the lowest resistance to all uropathogens; this can be revised for empirical treatment of UTIs. Continuous surveillance of uropathogens and their susceptibility is important.

Speaker Biography

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