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Prevalence of virulent and antibiotic resistant *Klebseilla pneumoniae* isolates among kidney stone patients from tertiary care hospital of Islamabad, Pakistan

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The prevalence of kidney stones is a worldwide problem and also in Pakistan of 40-50% renal workload which is increasing rapidly. One of the threatening outcomes is nephrolithiasis with complicated Urinary Tract Infection (UTI) due to obstruction of stones within urinary tract. *Klebseilla pneumoniae* is reported as second most prevailing microorganism after E. coli to cause UTI among stone patients. The prevalence of *K. pneumoniae* among patients having kidney stone and kidney stone plus UTI was determined in tertiary care hospital of Islamabad. Among 121 patients, 71 were diagnosed with UTI. A total of 61 *K. pneumoniae* were isolated from 53 urine samples of UTI patients (63%) through morphochemical characterization. Out of these isolates, 18 were found to be hypervirulent strains of *K. pneumoniae*, these isolates were prevalent among kidney stone with UTI patients. These isolates had biofilm formation ability and resistance to 40% serum, in addition to hemolysin and hemagglutination in few isolates. Biofilm formation ($P<0.015$ and $P<0.017$) and serum resistance ($P<0.008$) and ($P<0.005$) was found to be strongly associated with BMI and age (31-50 years) of patients. One third of these isolates were resistant to more than one class of antibiotics, cephalosporins (65-72%) and aminoglycosides (37-49%), hence were termed as multidrug resistant. Much higher resistance (98%) was found for amoxicillin, clindamycin and TMP/SMX. Imipenem and nitrofurantoin were found to be most effective drug. Strong correlation was found between antibiotic resistance pattern of *K. pneumoniae* and its biofilm forming ability against ciprofloxacin ($P>0.016$), tobramycin ($P>0.05$) and amoxicillin ($P>0.0005$). Overall, *K. pneumoniae* isolates which were virulent and antibiotic resistant were found to be prevalent in kidney stone patients with UTI was seen suggesting that there might be role of *K. pneumoniae* in development of UTI among kidney stone patients.

Biography

Sahar Zafar is Ph.D. scholar in department of Microbiology, Faculty of Biological Sciences in Quaid-i-Azam University Islamabad Pakistan. She has completed her M.phil from Govt. College University Lahore. She has also done internship at National health Research Council Pakistan. She has published a paper of her M.Phil research in a reputed journal.

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