Original Article

Antibiotic Resistance Pattern and the Prevalence of Extended Spectrum Beta-Lactamases (ESBLs) in Urinary Isolates of *Klebsiella Pneumoniae*

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Abstract

Background and Objective: *Klebsiella pneumoniae* is an opportunistic nosocomial pathogen causing a variety of infections including urinary tract infections, pneumonia, septicemia, wound infections and infections in the intensive care units. Since the ESBL producing *Klebsiella pneumoniae* strains are increasingly causing urinary tract infections, we aim to assess antibiotic resistance pattern and evaluate the prevalence of ESBL in *Klebsiella pneumoniae* isolated from urinary tract infections.

Material and Methods: this cross-sectional study was conducted on 122 *Klebsiella pneumoniae* strains collected from Zahedan hospitals. After final identification of isolates, antibiotic susceptibility tests were carried out by using disk diffusion in agar method for 16 antibiotics and ESBL production was determined by the combined disk method.

Results: The *Klebsiella pneumoniae* strains showed susceptibility to imipenem and amikacin (94.3%) ,chloramphenicol (88.5%) , gentamicin (81.1%) , ciprofloxacin (80.3%) , cefepime (73%) ,streptomycin (72.1%), nalidixic acid (68%) , tetracycline (65.6%), and cefotaxime, ceftazidime, cefpodoxime (62.3%) . The resistance of strains was seen to nitrofurantoin (53.3%), cotrimoxazole (39.3%), Cefpodoxime (37.7%), cefotaxime (36.9%), ceftriaxone (36.1%), aztreonam (34.4%), ceftazidime (32.8%). Thirty-eight isolates (31.1%) were shown to produce ESBLs.

Conclusion: A high rate of resistance was observed to most of the antibiotics among ESBL producing strains; therefore, it is important to be careful about the use of antibiotics and identification of ESBL using phenotypic methods.

Keywords: Antibiotic Resistance, Extended Spectrum Beta-Lactamases,*KlebsiellaPneumoniae*, Urinary Tract Infection, Isolate

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