University of Zabol
Graduat School
Faculty of Veterinary Medicine
Department of Pathobiology

The Thesis Submitted for the Degree of Doctor of Professionals

(in the Field of veterinary medicine)

Title:

Prevalence of metallobetalactamase producing strains among Pseudomonas aeruginosa isolates collected from patients admitted to Zabol Hospital
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Abstract

Introduction: Pseudomonas aeruginosa is one of the most important opportunistic pathogens and is considered as one of the main causes of nosocomial infections. The aim of this study was to evaluate the prevalence of metallobetalactamase producing strains among Pseudomonas aeruginosa isolates collected from patients admitted to Zabol Hospital.

Methods: In this study, 68 clinical isolates of Pseudomonas aeruginosa were collected from different wards of Zabol teaching hospitals. Kirby-Bauer method was used to determine antibiotic susceptibility. To determine the metallobetalactamase phenotype by DDST (Double-Disk Synergy Test) method, imipenem disk alone and imipenem disk with 10 μl of 0.5 M EDTA were used among imipenem resistant isolates.

Results: The findings of the present study showed that out of 68 isolates of: Pseudomonas aeruginosa, 10, 100, 85.3, 80.9, 9.2, 100, 100, 100, 64.7, 47.1, 95.6 , 100% and 63.2% of the strains were tested for antibiotic susceptibility to nalidixic acid, ampicillin, gentamicin, ceftriaxone, cefotaxime, cephalexin, cephalothin, trimethoprim-sulfamethoxine, amphotericin, amikotin, amphotericin.

Conclusion: in comparaision to other studies, the level of resistance in most antibiotics was similar to the pattern of resistance in other regions. Amikacin was the most effective antibiotic and imipenem and sulfamethoxazole were the next most effective drugs.

Keywords: Pseudomonas aeruginosa, Metallo beta-lactamase