Study of Antibiotic Resistance in Pseudomonas Aeruginosa Hospital Isolation

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Background & Objectives: *Pseudomonas aeruginosa* as generator of Metallo beta lactamase (MBL) is one the most important hospital infection factors that to be caused for majority of infections in patients with fault in immunity system, burn and even in health persons. The goal of present research is study and determine the newest antibiotic resistance and availability of MBL *Pseudomonas aeruginosa*.

Methods: 212 clinical *Pseudomonas aeruginosa* samples were collected from 10 hospitals in Tehran and used PCR procedure for verification of *Pseudomonas aeruginosa*. Antibiogrm test is performed on disk diffusion methods on muller Hinton agar generator environment and with 10 antibiotic disc including Imipenem, Gentamicin, Azithromycin, Ceftazidime , Ciprofloxacin, Cefotaxime, Piperacillin, Tetracycline, Tobramycin, Ticarcillin and results studies on CLSI standard basis. Then all samples analyzed from view point the minimum prevention concentration of Imipenem (MIC). Those items that are resistance against imipenem were studies on double disc diffusion and with EDTA to observe MBL enzyme.

Results: Percentage of resistance to antibiotics includes: Ceftazidime 46.69%; Imipenem 47.16%; Cefotaxime 62.26%; Tetracycline 86.32%; Piperacillin 53.77%, Azithromycin 46.69%, Gentamicin 51.41%, Tobramycin 50.47%, Ciproflloxacin 44.81% and Ticarcillin 60.37%. Among all samples, 23.11% have MIC $\geq$ 16 and among 100 resistance factors to Imipenem, 73 factors are generator of MBL.

Conclusion: Results shows that extent of *Pseudomonas aeruginosa* resistance increase in Iran toward majority of antibiotics and in this regard physicians should pay more attention to prescribe antibiotics of patients and to prevent MBL factors of bacteria.

Keywords: *Pseudomonas aeruginosa*; Metallo Beta Lactamase; Antibiotic Resistance