Antibiotic susceptibility and plasmid profiles of *Pseudomonas aeruginosa* strains isolated from burned patients in Tehran, Iran

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*Pseudomonas aeruginosa* as an important life-threatening nosocomial pathogen plays a prominent role in serious infections in burned patients. In the last decades, *P. aeruginosa* has become prevalent agent of hospital infection due to high antimicrobial resistance developed by this microorganism. The current study was undertaken to characterize *P. aeruginosa* strains isolated from burned patients in Tehran, Iran. The study was conducted in a major burn center in Tehran, Iran in 2007.

A total of seventy specimens obtained from different clinical origin with positive culture results for *P. aeruginosa* were included in the study. Antimicrobial susceptibility test was performed according to the standard CLSI guideline. The relationship between the strains was also determined using antimicrobial drug resistance pattern analysis and plasmid profiling.

All strains were multi drug resistant. The percentage of resistance to tested antibiotics was: imipenem 97.5%, amikacin 90%, piperacillin 87.5%, ceftizoxime 72.7%, gentamicin 67.5%, ciprofloxacin 65%, ceftriaxone 60%, and ceftazidime 57.5%. Thirteen resistant phenotypes were recognized, R3 (TET, IPM, AMK, CIP, PIP, GM, CAZ, CRO, CT) was the predominant resistance pattern seen in 27.5% of isolates. Results obtained from E-test showed that 100% of *P. aeruginosa* strains were resistant to cefoxitin, 97% to cefotetan, 93% to ticarcillin, 89% to ticarcillin/clav, 76% to gentamicin and imipenem, 63% to piperacillin, 49% to tetracycline, and 20% to meropenem. Nine different plasmid profiles were observed among the strains.

The current study showed an increase rate of resistance for some antibiotics tested among *P. aeruginosa* strains isolated from burned patients in Tehran, Iran. A combination of antibiotic susceptibility testing and profile plasmid analysis, which are relatively cheap and available methods, showed to be useful to characterize the clinical strains of *P. aeruginosa* isolated from burned patients in Iran.

**Key words:** *Pseudomonas aeruginosa*, Antimicrobial susceptibility, Plasmid profiles