Investigating the ability of biofilm production and drug resistant pattern of *Pseudomonas aeruginosa* isolates collected from burn patients in Amir-al-Momenin burn hospital – Shiraz using disc diffusion method

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**Introduction:** *Pseudomonas aeruginosa* is a non-fermented, and aerobic bacillus bacterium that is considered as the third opportunistic hospital pathogen and the first cause of bacterial burn wound infections. This bacterium has several pathogenicity factors and, besides, it tends to form biofilms. *P. aeruginosa* has a genetic capacity to produce at least 3 types of secretion polysaccharides, named as Alginate, PSL and Pel, which are essential for the formation of biofilms. We aimed to focus on strains of *P. aeruginosa* that are collected from burn patients and they have the ability to produce biofilms and investigating the type of secretory polysaccharides of these strains, examine the presence of genes such as algK, algE, pslB and pelG that play a role in biofilm formation and also evaluate the antibiotic sensitivity pattern by disk diffusion method.

**Materials and Methods:** In this descriptive and cross sectional study, about 200 bacterial specimens were collected from the wound, urine and swab of the throat and nose of patients admitted to the Amir-al-momenin hospital of Shiraz. After confirmation isolates by phenotypes and API systems, then Antibiotic resistance of the isolates were determined by disc diffusion method according to the CLSI instruction.

**Results:** 88 samples of *P. aeruginosa* were identified. The percentage of antibiotic resistance obtained in this study were ciprofloxacin 50(56.8%) and aztreonam 40(45.5%), piperacillin 55(62.5%) and carbencylcin 66(75%), meropenem 44(50%), imipenem 55(62.5%) and ceftazidime 56(63.6%), gentamycin 58(65.9%), tobramycin 58(65.9%) and colistin 1(1/1%). Total of 78(88.6%) of the isolates were biofilm positive while 79.5%, 60.2% and 67% were harbor pelG, pslB and algE/K genes respectively.

**Conclusion:** The results indicate a high prevalence of biofilm production and an increase in the rate of *pseudomonades* antibiotic resistance to routine antibiotics used in hospitals, due to protocols for AB use in clinical states.