A Comparison of Multidrug Resistance Rates of Pseudomonas Aeruginosa Strains in Burn Patients in Iran in 2006 and 2015

Samaneh Shirazi¹, Jalil Rashedi¹, *, Behroz Mahdavi Poor¹, ², Mohammad Asgharzadeh³, Seyyed Reza Moaddab¹

¹Department of Laboratory Science, Faculty of Paramedicine, Tabriz University of Medical Sciences, Tabriz, IR Iran
²Department of Medical Parasitology, School of Medical Sciences, Tarbiat Modarres University, Tehran, IR Iran
³Biotechnology Research Center and Faculty of Paramedicine, Tabriz University of Medical Sciences, Tabriz, IR Iran

*Corresponding Author: Jalil Rashedi, Department of Laboratory Science, Faculty of Paramedicine, Tabriz University of Medical Sciences, Tabriz, Golgash Ave, Azadi St, Tabriz, IR Iran. Tel: +9841-33392633, Fax: +9841-33371971, Email: Rashedijalil@gmail.com

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Dear Editor

Burn patients are specifically threatened by nosocomial infections [1]. In these patients, the body’s first line of defense is destroyed and immune system functions are decreased, especially in the first week after the burn. As a result, opportunistic pathogens quickly attack the patient's body [2]. One such pathogen that greatly threatens the life of a burn patient is Pseudomonas aeruginosa [3, 4]. This study was done on 151 positive-cultured burn patients (with samples taken from the burn scars) hospitalized in Sina Hospital in Tabriz, the only burn treatment hospital in northwestern Iran, from early March 2015 until the end of that year. Among these patients, 60 (39.7%) had Pseudomonas aeruginosa, 37 cases (24.5%) had Acinetobacter, 29 cases (19.2%) had Staphylococcus aureus, 14 cases (9.3%) had Klebsiella, 6 cases (4%) were of E. coli, and 5 cases (3.3%) had Enterobacteriaceae.

This study compared the results of this study and those obtained by Dr. Nahaei et al. regarding the multidrug resistance of isolated Pseudomonas aeruginosa [5] tested on 135 isolated bacteria in the same hospital in the past 10 years (2006). After 10 years, unfortunately, a noticeable increase in resistance to the nine essential, common antibiotics used to treat these strains was observed in both studies (Figure 1). The highest rates of increase were seen with the 3 antibiotics imipenem (25 times), amikacin (4.5 times), and ciprofloxacin (3.7 times), and ceftazidim and pipracilline showed the lowest increase.

![Figure 1. The percentage of multidrug-resistance of Pseudomonas aeruginosa strains, a comparison in the years of 2006 & 2015](image)

To identify resistant strains, it seems necessary to periodically survey the burn patients' hospital equipment, based on the culturing process, and the use of Pseudomonas polyvalent anti-sera in treatment is essential to reducing the rate of increase in the drug resistance of this bacterium. Sadly, it must be confessed that the production of new generation drugs used to fight against this deadly microorganism seriously lags behind the rate of its face-off against antibiotics.
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Conflicts of Interest
All authors declare that there are no conflicts of interest.

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