



A study on Antibacterial Effects of lavandula Essential oil on Drug Resistant *Pseudomonas aeruginosa* Isolates in Golestan province

Shamim Mahmoudjanloo , Leila Fozouni *, Tina Dadgar

۱- MSc of Microbiology, Department of Biology, Gorgan Branch, Islamic Azad University, Gorgan, Iran

۲- Assistant Professor in Microbiology, Department of Biology, Gorgan Branch, Islamic Azad University, Gorgan, Iran

۳- Assistant Professor in Microbiology, Department of Biology, Gorgan Branch, Islamic Azad University, Gorgan, Iran

Abstract

Background and objective : *Pseudomonas aeruginosa* is an opportunistic bacterium and is one of the main causes of infection in burn patients. This study aims to determine the antibacterial effects of Lavandula essence on the growth of drug-resistant strains of *Pseudomonas aeruginosa*.

Methods: This descriptive study was carried out on ۹۰ patients that hospitalized in Golestan province Hospitals . Culture methods and diagnosis tests were used to separate and diagnose *Pseudomonas aeruginosa*, and disk diffusion agar method with the Kirby-Bauer standard was applied to determine the pattern of drug-resistance. The antibacterial effect and the minimum inhibitory concentration (MICs) of lavandula were determined by broth microdilution test . **Results:** In this study, ۳۴.۵% strains were diagnosed as *Pseudomonas aeruginosa*, out of which ۸۷.۰۹% showed resistance to Ceftazidime, ۸۰.۶۵% to Tobramycin & Cefepime, ۷۷.۴۱% to Gentamicin , ۷۰.۹۸% to Piperacillin and ۷۰.۹۶% to Norfloxacin. In the present study, the MIC of lavandula against *Pseudomonas aeruginosa* was determined at ۴-۱۰۲ μl/ml, in which the most growth fluctuations it had were seen in the densities of ۵۱۲ and ۲۵۶ μl/ml. Also, No growth was also observed in the densities of ۱۰۲۴ μl/ml and higher . **Conclusions:** Spread of *P. aeruginosa* resistant to agents is very high in hospitals, and lavandula essence proved anti-bacterial effects while considerable difference was seen between the strains sensitive and resistant to antibiotics .

Key words: *Pseudomonas aeruginosa*, Drug resistance, Lavandula, Essence