

عنوان مقاله:

The relationship between the activity of efflux pumps and formation of biofilm in multi-drug resistance pseudomonas aeruginosa and Acinetobacter Baumannii isolated from burn patients

محل انتشار:

نهمین کنگره کشوری سوختگی (سال: 1398)

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نویسندگان:

Neda Pirbonyeh - *Department of microbiology, Burn and Wound Healing Research Center, Microbiology Department, Shiraz University of Medical Sciences, Shiraz, Iran*

Abdolkhalegh Keshavarzi - *Burn and Wound Healing Research Center, Shiraz University of Medical Sciences, Shiraz, Iran*

Amir Emami - *Department of microbiology, Burn and Wound Healing Research Center, Microbiology Department, Shiraz University of Medical Sciences, Shiraz, Iran*

خلاصه مقاله:

Background and Aim : Background: Efflux pumps are widely implicated in antibiotic resistance because they can extrude the majority of clinically relevant antibiotics from within cells to the extracellular environment. However, there is increasing evidence from many studies to suggest that the pumps also play a role in biofilm formation. In this study, we investigated the association between efflux pump activity and biofilm formation in *Pseudomonas aeruginosa* and *Acinetobacter baumannii* isolates in clinical burn patients. **Methods :** Methods: Clinical isolates of MDR Gram-negative bacteria were collected from various clinical laboratory samples from burns. Their efflux pump in bacteria was detected by phenotypic assays - ethidium bromide (EB)-agar cartwheel method. The bacteria isolate were analyzed for their ability to biofilm production using microtiter dish biofilm formation assay with 0.1% crystal violet according to the instructions described. The absorbance of each well was measured at 570 nm using an ELISA reader. **Results :** Result: The 100 Gram-negative MDR strains tested comprised *Pseudomonas aeruginosa* (n=50) and *Acinetobacter baumannii* (n=50). The efflux activity was revealed at a minimum concentration of EB at 2 mg/l. Efflux pump activity was observed in 94% of *Acinetobacter* and 70% of *Pseudomonas* isolates. These isolates showed the high tendency for biofilm formation. 42 isolates of *Acinetobacter* and 20 isolates of *Pseudomonas* were able to produce strong biofilm. **Conclusion :** Conclusion: This outcome can suggest efflux pump inhibitors as a promising agent to reduce .biofilm and to enhance its susceptibility to antibiotics

کلمات کلیدی:

Nano particles; pseudomonas aeruginosa; Acinetobacter baumannii; Biofilm, efflux pump

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