

عنوان مقاله:

Frequency of type III Secretion System Cytotoxins -Encoding Genes among Pseudomonas Aeruginosa Isolated from Burn Patients

محل انتشار:

مجله علمی پژوهشی دانشگاه علوم پزشکی زنجان, دوره 23, شماره 99 (سال: 1394)

تعداد صفحات اصل مقاله: 12

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خلاصه مقاله:

Background and Objective: Pseudomonas aeruginosa is an opportunistic pathogen causing nosocomial burn infections. Disease results from the production of numerous virulence factors, some of which are injected directly into the eukaryotic host cells via the type III secretion system (T₃SS). The aim of this study was to determine the prevalence of cytotoxins encoding exoT, exoY, exoS and exoU genes among the P. aeruginosa isolated from burn patients. **Materials and Methods:** Over one year period of study, a total of 95 isolates of P. aeruginosa were collected and identified from burn infections in hospitalized patients. Polymerase chain reaction (PCR)-based method was used for detection of exoT, exoY, exoS and exoU genes. According to CLSI (Clinical Laboratory Standards Institute) guidelines antimicrobial susceptibility testing was performed by disc diffusion method against 10 antibiotics. The data were analyzed by χ^2 test. A p value of <0.05 was considered as statistically significant. **Results:** All of the isolates of P. aeruginosa contained exoT gene while exoY gene was detected in 69.5% of isolates. The prevalence of exoU and exoS genes was 44.1% and 35.8%, respectively. 8.42% of isolates harbored all of the four genes. Coexistence of exoS and exoU was seen in 10.5% of the isolates. High resistance rates were seen for cefipime, Azteronam and Ofloxacin. **Conclusion:** Considering the low prevalence of exoS in P. aeruginosa causing burn infection in comparison with other infections caused by this bacterium, it seems that this gene has a minor role in the P. aeruginosa pathogenesis isolated from burn infection. Instead, exoT and exoY were found in nearly all isolates and probably, these genes may

have a greater role in burn infections. References ۱- Veessenmeyer JL, Hauser AR, Lisboa T, Rello J. Pseudomonas aeruginosa virulence and therapy: evolving translational strategies. Crit Care Med. ۲۰۰۹ ۳۷: ۱۷۷۷-۸۶. ۲- Jabalameli F, Mirsalehian A, Sotoudeh N, et al. Multiple-locus variable number of tandem repeats (VNTR) fingerprinting MLVF and antibacterial resistance profiles of extended spectrum beta lactamase (ESBL) producing Pseudomonas aeruginosa among burnt patients in Tehran. Burns. ۲۰۱۱ ۳۷: ۱۲۰۲-۷. ۳- Ranjbar R, Owlia P, Sadari H, et al. Characterization of Pseudomonas aeruginosa strains isolated from burned patients hospitalized in a major burn center in Tehran, Iran. Acta Med Iran. ۲۰۱۱ ۴۹: ۶۷۵-۹. ۴- Branski LK, Al-Mousawi A, Rivero H, Jeschke MG, Sanford AP, Herndon DN. ... Emerging infections in burns. Surg Infect (Larchmt). ۲۰۰۹ ۱۰: ۳۸۹-۹۷. ۵- Mesaros N, Nordmann

کلمات کلیدی:

Keywords: Pseudomonas aeruginosa, Burn infection, Cytotoxins genes

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