عنوان مقاله:

Frequency of exoY, exoS, exoT and exoU genes among Pseudomonas aeruginosa Isolated from patients in Tehran hospitals by Multiplex PCR

محل انتشار:

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خلاصه مقاله:

Background and Aim: Pseudomonas aeruginosa is a gram-negative pathogen that causes a variety of serious infections predominantly in immunocompromised patients. To promote severe illness, P. aeruginosa uses a type III secretion system to inject toxic effector proteins into the cytoplasm of eukaryotic cells. Four effector proteins have been described in P. aeruginosa: ExoU, ExoS, ExoT, and ExoY. The aim of the study was to determine the prevalence of the type III secretion system toxins-encoding genes among P. aeruginosa isolates collected from different clinical specimens such as urine, wound, blood and respiratory secretions from patients. Materials and Methods: ۵۵ Pseudomonas aeruginosa isolates were identified from hospitalized patients in Tehran during ۲۰۱۵ – ۲۰۱۶, using conventional microbiological tests. The susceptibility of isolates to antibiotics were assessed using disk diffusion test. After DNA extraction, Multiplex PCR was performed on the P. aeruginosa isolates to detect the secretion toxins-encoding genes. Results: High resistance rates were seen for cefipime (۸۹%), ceftazidime (۸۵.۴۵%), aztreonam (۸۳.۶۳%), tobramycin (۷۸.۱۸%) and gentamicin (۶۰%). The prevalence of the genes among all isolates was as follows; exoT (۷۶.۳۲%), exoS (۳۰.۹۰%), exoY (۱۴.۵۴%) and exoU (۶۷.۲۷%). exoU was more prevalent among MDR than in non-MDR strains (۸۱.۳% versus۱۶.۶%). exoU+ isolates were more likely to be fluoroquinolone-resistant than exoS+ isolates (۳۲% versus ۱۷%). Conclusions: Type III secretion system toxins-encoding genes found in isolated P.aeruginosa, in which exoT, exoU and exoS gene detected in most isolates while exoY gene was detected in minaroty of the isolates.

کلمات کلیدی:

Pseudomonas aeruginosa, Type III secretion system, Multiplex PCR, سودوموناس آئروژینوزا, سیستم ترشحی نوع سه, PCR چندگانه