

عنوان مقاله:

Hotspot mutations in genes involved in fluoroquinolone resistance in *Pseudomonas aeruginosa* in Guilan

محل انتشار:

نخستین همایش ملی یافته های نوین میکروبیولوژی (سال: 1394)

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خلاصه مقاله:

Introduction: *Pseudomonas aeruginosa* is a gram-negative bacterium that continues to be a major cause of opportunistic nosocomial infections. In *Pseudomonas aeruginosa*, several quinolone resistance mechanisms have been proposed such as mutation in topoisomerase enzymes and negative regulatory genes involved in efflux pump systems. Herein, we investigated mutation in some of them by PCR-sequencing. **Materials & Methods:** In this study, forty-four *pseudomonas aeruginosa*, isolated from different clinical samples from burned and infected patients in Guilan hospitals were identified by biochemical tests. The antibiotic resistance and susceptibility of strains was determined by Kirby Bauer method and MIC, and then PCR-sequencing was carried out to assess mutation in several genes involved in fluoroquinolone resistance. **Results:** From 44 isolates, 14 isolates were fluoroquinolone resistance. All 14 strains were nalidixic acid with MIC=1024 µg/ml. while ciprofloxacin resistance was showed in resistance isolates with MIC between 32 to 1024 µg/ml. PCR-sequencing analysis showed that all 14 fluoroquinolone resistance isolates had one or two hotspot mutations in *gyrA* mutation. In some ciprofloxacin resistance isolates was showed hotspot mutations in *parC*, *mexR* and *nalC*. Herein, three strains had new mutations in *mexR* gene (ins/del). **Conclusion:** High resistance to ciprofloxacin in *Pseudomonas aeruginosa* strains in Guilan can be result of mutation in several genes such as topoisomerase enzymes and negative regulatory genes implicated in efflux pump systems expression.

کلمات کلیدی:

Pseudomonas aeruginosa, topoisomerase, fluoroquinolone resistance, mutation

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