عنوان مقاله:

Prevalence of plasmid-mediated AmpC in clinical isolates of Escherichia coli in Gazvin

محل انتشار:

بیستمین کنگره بین المللی میکروب شناسی ایران (سال: ۱۳۹۸)

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خلاصه مقاله:

Introduction and Objectives: One of the causes of resistance to third generation cephalosporins is production of AmpC beta-lactamases which can be encoded by chromosome or plasmids. The purpose of this study was to determine the prevalence of six plasmid-mediated AmpC (pAmpC) among Escherichia coli isolates in Qazvin. Materials and Methods: The ۱۹۶ isolates of E. coli were collected from patients with different infections during ۲۰۱۸ to ۲۰۱۹ from four hospitals in Qazvin. For all isolates, antimicrobial susceptibility testing for cefoxitin (۳۰ µg) was performed using the Kirby–Bauer disk diffusion method and the results were interpreted according to the Clinical Laboratory Standards Institute guidelines. PCR was performed on non-susceptible cefoxitine isolates for detection of six plasmid-mediated AmpC-specific families (MOX, FOX, CIT, EBC, DHA, and ACC). Results: With respect to phenotypic resistance to cefoxitin, ۳۲ isolates were non-susceptible to cefoxitin (۲۸ resistant and ۴ intermediate susceptible). The prevalence of pAmpC families among non-susceptible cefoxitin E. coli isolates was ۳۴.۳%. In other words, the plasmid-mediated ampC genes were detected in ۱۱ out of ۳۲ isolates which ۷ isolates from three different hospitals were found to harbor blaCIT gene and ۴ isolates from a hospital carried blaDHA gene. However, the remaining pAmpC families including MOX, FOX, EBC, and ACC were not were not detected in our isolates. Conclusion: In this study, we showed that more than one-third of non-susceptible cefoxitin isolates harbored at least one pAmpC families. Further studies are needed to find the cause of cefoxitin resistance among remaining non-susceptible isolates which is probably mediated by chromosomal AmpC β-lactamase.

کلمات کلیدی:

Escherichia coli, plasmid-mediated AmpC β-lactamases (pAmpC), Prevalence