

عنوان مقاله:

Phenotypic and Molecular Characterization of Carbapenems Resistant Escherichia coli Isolated from Patients with Urinary Tract Infections in Ardabil Province, Iran

محل انتشار:

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خلاصه مقاله:

Background & Objective: Carbapenem-resistant is Gram-negative bacteria representing a worldwide public health problem. The present study aims to survey the phenotypic and genotypic characteristics of carbapenem-resistant Escherichia coli isolates collected from hospitalized patients and outpatients in Ardabil province, Iran. **Methods:** Two hundred samples were collected from the patients who had already been referred to the hospitals in Ardabil, Iran, from January to June ۲۰۱۷. Each patient's social and demographic data were recorded in the first step. The resistance profile of all E. coli isolates against imipenem and meropenem antibiotics were determined using the Kirby-Bauer disk diffusion method. Moreover, the broth microdilution method determined the Minimum Inhibitory Concentration (MIC) of E. coli isolates to imipenem. The Carbapenem Inactivation Method (CIM) and Carba NP test were employed for screening carbapenem-resistant strains. The frequency of carbapenem-encoding genes was determined using Polymerase Chain Reaction (PCR) method. The Enterobacterial Repetitive Intergenic Consensus (ERIC)-PCR analysis was used to evaluate the genetic relatedness of E. coli isolates. **Results:** Out of ۲۰۰ urine samples, ۶۶% (n = ۱۳۲) of the samples were collected from women. The patients' age varied from ۱ month to ۹۳ years. Results of the disk diffusion method revealed that ۳۳% (n=۶۶/۲۰۰) of E. coli isolates were resistant to imipenem. However, imipenem resistance was detected in ۳۷% (n = ۷۴/۲۰۰) of the E. coli isolates using broth microdilution method. All E. coli isolates were negative in CIM and Carba NP tests. Moreover, we could not detect any carbapenemase encoding genes among E. coli isolates. The ERIC-PCR method revealed the E. coli strains were classified into ۳۹ clusters with ۸۰% similarity. **Conclusion:** It appears that E. coli is the most common cause of urinary tract infection in Ardabil province

کلمات کلیدی:

Carbapenemase, Escherichia coli, Urinary tract infections

