

عنوان مقاله:

Frequency of E. coli Clinical Isolates Producing Blashv and Blatem Extended-Spectrum Beta-Lactamases

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خلاصه مقاله:

Introduction: Production of extended-spectrum beta-lactamase enzymes (ESBLs) in E. coli creates many problems for patients. These enzymes are located on transferable elements and can hydrolyze penicillins, broad-spectrum cephalosporins, and aztreonam. This study aimed to determine the clinical isolates of E. coli producing ESBLs of blaSHV and blaTEM in the city of Zanjan. **Methods:** This cross-sectional study was performed on ۲۰۰ E. coli isolates from clinical samples, including urine, feces, and secretions. The samples were cultured on EMB agar medium and the isolates were confirmed with various diagnostic tests. Then the sensitivity of strains to antibiotics and the production of ESBLs were determined by disc diffusion and combined disc methods, respectively. Finally, the presence of blaSHV and blaTEM genes was investigated by PCR using specific primers. **Results:** Amoxicillin had the highest resistance by ۶۸.۵% (۱۳۷ isolates) and imipenem the lowest by zero percent. Resistance to the studied antibiotics were as follows; co-trimoxazole ۴۶.۵% (۹۳ isolates), cefotaxime ۳۴.۵% (۶۹ isolates), ceftazidime ۳۱.۵% (۶۳ isolates), cefepime ۲۹.۵% (۵۹ isolates), gentamycin ۲۸.۵% (۵۷ isolates), aztreonam ۴۵% (۹۰ isolates), ciprofloxacin ۲۵.۵% (۵۱ isolates), co-amoxiclave ۱۸.۵% (۳۷ isolates), cefoxitin ۱۹% (۳۸ isolates), and amikacin ۴.۵% (۹ isolates). According to the combined disc test, ۶۶ strains (۳۳%) were ESBL-producing enzymes and the frequency of blaTEM and blaSHV genes was ۴۶.۹% (۳۱ isolates) and ۵۶% (۳۷ isolates), respectively. **Conclusion:** Given the resistance of ESBL strains to existing antibiotics and the ability to transfer these genes to other clinical isolates, performing antibiotic sensitivity tests and detection of ESBLs in laboratories is necessary for reducing treatment failure.

کلمات کلیدی:

Escherichia Coli, β -lactamase, Polymerase Chain Reaction, Escherichia Coli, β -lactamase, Polymerase Chain Reaction

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