

## عنوان مقاله:

Correlation between antibiotic resistance and phylogenetic types among multidrug-resistant *Escherichia coli* isolated from urinary tract infections

## محل انتشار:

مجله علوم پایه پزشکی ایران، دوره 24، شماره 3 (سال: 1400)

تعداد صفحات اصل مقاله: 8

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## خلاصه مقاله:

**Objective(s):** Emergence of multidrug resistance has reduced the choice of antimicrobial regimens for UTIs. To understand the association of phenotype and genotype among uropathogens. **Materials and Methods:** Six hundred and twenty-eight (628) urine samples were collected and analyzed. Antibiotic sensitivity pattern was determined by the Kirby-Bauer Disc Diffusion Method and minimum inhibitory concentration (MIC) was tested by the E test. Fluoroquinolone resistant mutations in QRDR of *gyrA* and *ParC*, phylogenetic groups, and *PAI* subtype were detected by PCR. **Results:** Most prevalent uropathogens were *Escherichia coli* (53.2%) followed by *Klebsiella pneumoniae* (21%). Multidrug- resistance was observed in > 50% cases for third-generation cephalosporins and ciprofloxacin and lowest in meropenem. *E. coli* (66.2%) and *K. pneumoniae* (64.4%) were extended-spectrum  $\beta$ -lactamases (ESBLs) producers. MIC to trimethoprim-sulfamethoxazole was highest in *E. coli* (>1024  $\mu$ g/ml). In 80 (24%) of the 334 *E. coli* isolates analyzed in detail, 54 fluoroquinolones (FQ) resistant isolates carried mutations (S83L, D87N, S80I, E84V) in QRDR of *gyrA* and *ParC*. Out of 54 FQ-resistant isolates, 43 (79.6%) isolates belonged to the phylogenetic group B2, and 11 (20.4%) belonged to group D. Isolates belonged to group B2, 38 (88.4%) of the 43

isolates carried PAusp subtype IIa and high frequency of mutation E $\lambda$ FV in ParC was detected in ۳۷ (۹۷.۴%). Other mutations, such as S $\lambda$ ◦I, S $\lambda$ ۳L in gyrA and D $\lambda$ YN in ParC were found in all resistant isolates. Conclusion: Correlations between phenotype and genotype provided a basis to understand the resistance development in uropathogens, and .PAusp subtyping indicated that E. coli belonged to the B۲ group

## کلمات کلیدی:

Escherichia coli, ESBL, MDR, PCR, UTI

## لینک ثابت مقاله در پایگاه سیویلیکا:

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