**Abstract:**

Background and Objectives: Beta-lactamase enzymes are the most causes of resistance to antibiotics among Enterobacteriaceae family of gram-negative bacteria. Resistance to antibiotics due to ESBLs has newly become widespread throughout the world and is considered as a new burden to the health systems. This study aimed to determine the susceptibility pattern of E. coli isolates collected from the urine samples to beta-lactam antibiotics, and to investigate the presence of blaSHV and blaCTX-M genes among them.

Methods: 246 samples Escherichia coli isolated from urinary tract infections were collected through different hospitals located in the city of Tehran. The antibiotic susceptibility of E. coli isolates were determined by disc-diffusion method. Antimicrobial agents tested included cefoxatime, ceftazidime, imipenem, nalidixic acid, and ciprofloxacin. The combined disc test was used to confirm the results. The results were compared with Clinical and Laboratory Standards Institute (CLSI) and ESBL positive isolates were further investigated for the presence of blaSHV and blaCTX-M genes by Multiplex PCR.

Results: Of 246 E. coli isolates, 116 (47.1%) were resistant to ceftazidime, while the number of isolates resistant to cefoxatime was 96 (39.2%). A total of 109 (44.3%) isolates were ESBL positive. blaSHV and blaCTX-M genes were found among 82 (70.8%) and 75 (68.8%) ESBL positive isolates, respectively. Moreover 55 (50%) isolates were carrying blaSHV and blaCTX-M genes together.

Conclusion: Regarding the high frequency of resistance to the third generation cephalosporin antibiotics, precise antibiogram testing is highly recommended before any antibiotic prescription in case of infections with ESBL producing microorganisms.

**ESBL, Escherichia coli, urinary tract infections, blaSHV, blaCTX-M, Multiplex PCR**

**Presentation:** Poster