

## Antimicrobial Resistance to Ceftazidime and Ceftriaxone, and Detection of TEM Gene in *Escherichia Coli*

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### Abstract

**Background and Objective:** In the past, most strains of *E. coli* were susceptible to a wide range of antimicrobial agents, but this situation is now changed by indiscriminate use of antibiotics. Ceftriaxone and Ceftazidime are the most current antibiotics used for Enterobacteriaceae infections in hospitals. The aim of this study was to determine antimicrobial resistance of *Escherichia coli* strains isolated from patients.

**Material and Methods:** During a 12-month period, 200 clinical samples taken from patients referred to Zahedan hospitals were assessed to isolate *Escherichia coli*. Antibiotic susceptibility was determined by disk diffusion method and micro-broth dilution; and Bla TEM resistance genes were detected by PCR.

**Results:** Following phenotype verification testing, 112 isolates (56%) were produced Extended Spectrum Beta Lactamase (ESBLs) and 130 isolates were potential producers of beta-lactamase (ESBL). Using PCR, 72 isolates (38.55%) have TEM gene.

**Conclusion:** The rate of antibiotic resistance of *Escherichia coli* isolates to ceftriaxone and ceftazidime is high; therefore, it seems reasonable to do antibiogram before treatment.

**Keywords:** Extended-Spectrum-Beta-Lactamase, *Escherichia coli*, Disc Diffusin, Micro-Broth Dilution