

## Prevalence of Extended Spectrum $\beta$ -Lactamase Producing Gene TEM-1, among *Escherichia coli* Isolated from Urinary Tract Infection Cases in Bam City During 2011

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**Background & Objectives:** *Escherichia coli* is a common cause of bacterial urinary tract infection. The gene, TEM1 is one of the common genes that produce extended spectrum  $\beta$ -lactamase (ESBL). Recently, the resistance to the antibiotics among the bacterial agents of infectious has been raised, which in addition to medical therapeutics side effects on the infectious diseases and the patients; it has spend considerable cost on not only the consumers, but also the economy of the country. As a result, this study was designed for the better understanding of the problem at the area of study (Bam) and appropriate methods will be offered to prevent more medical difficulties.

**Methods:** The study was performed out of a hundred separation of *E. coli* obtained from the patients with the urinary tract infection, who referred to the laboratories of Bam city. The isolated *E. coli* has been confirmed through standard procedures. It should also be mentioned that the DNA extraction was taken by NaOH lyses standard procedures. Then the prevalence of TEM-1 gene was examined by using of specific primers by PCR methods. The standard strains ATCC 35218 and 700603 of *E. coli* were utilized as positive controls. Additionally, the sensitivity of isolated *E. coli* strains to the antibiotics were investigated by Kirby Bauer standard methods (Disk Diffusion) for the cefotaxime, amikacin, imipenem, ceforoxime, ampicillin/sulbactam, cefepime antibiotics.

**Results:** Among 100 examined *E. coli* isolates, 11 isolates were positive for TEM-1 gene. The maximum antibiotic resistances were recorded against cefotaxime (63%), ampicillin/sulbactam (35%), ceforoxime (34%), cefepime (21%), amikacin (12%), imipeneme (1%) respectively.

**Conclusion:** The TEM1 gene has had a major role in the production of ESBL strains. Based on the increasing spread of antibiotics resistance among the pathogenic *E. coli* strains of urinary tract infection, it is recommended to pay considerable attention the prescriptions and the usage of antibiotics.

**Keywords:** *Escherichia coli*; Extended Spectrum  $\beta$ -Lactamase; Urinary Tract Infection; Bam