

## #1983 - MDR and ESBL patterns of *E. coli* isolates recovered in acute and recurrent episodes of urinary tract infection in out- or in-patients of two referral hospitals in Tehran, Iran

Authors and Affiliations	<ol style="list-style-type: none"><li>1. Moein Saleh, Molecular Biology Department, Pasteur Institute of Iran, 0015410118</li><li>2. Amin Abd, Molecular Biology Department, Pasteur Institute of Iran, 1271439662</li><li>3. Masoud Mardani, Infectious Diseases and Tropical Medicine Research Center, Shahid Beheshti University of Medical Sciences</li><li>4. Alireza Abdollahi, Department of Pathology, Tehran University of Medical Sciences</li><li>5. Saeid Bouzari, Molecular Biology Department, Pasteur Institute of Iran</li><li>6. Mohammad Pooya, Molecular Biology Department, Pasteur Institute of Iran, 0054990335</li></ol>
Corresponding Author and email	Mohammad Pooya, Molecular Biology Department, Pasteur Institute of Iran, 0054990335
Body	<p><b>Introduction:</b> Urinary tract infection (UTI) is the most common nosocomial infection worldwide, and uropathogenic <i>Escherichia coli</i> (UPEC) is its main causative bacteria. Multi-drug resistant (MDR) and extended-spectrum beta-lactamase (ESBL)-producing gram-negative uropathogens such as UPEC has become a great concern during recent years. However, their patterns may vary depends on the source of infection (community-acquired or nosocomial) as well as the episode of UTI (acute or recurrent).</p> <p>This study was conducted to evaluate the MDR and ESBL patterns of UPEC isolates recovered in acute and recurrent phases of urinary tract infection of the same patients, whether out- or in-patients in two referral hospitals in Tehran, Iran.</p> <p><b>Method:</b> The urine samples of out-/in-patients suffering from UTI in Loghman Hakim and Imam Khomeini hospitals were collected and they were under supervision for any probable recurrence during 1 year. Then, isolates were collected from urine samples and subjected for differential cultures to select the <i>E. coli</i> isolates, and antibiotic susceptibility test using disk diffusion method was</p>

## #1983 - MDR and ESBL patterns of *E. coli* isolates recovered in acute and recurrent episodes of urinary tract infection in out- or in-patients of two referral hospitals in Tehran, Iran

performed for each of them. MDR was defined based on a proposal published by a group of international expert from the European Centre for Disease Prevention and Control and the Centers for Disease Control and Prevention in 2012. ESBL pattern was tested and defined according to the Performance Standards for Antimicrobial Susceptibility testing published by the Clinical and Laboratory Standards Institute in 2018.

**Results:** 170 *E. coli* isolates were recovered from the urine of 78 patients (45 female, 24 male) having both acute and recurrent phases of UTI (some patients had more than one recurrence phase). Around 40% of the *E. coli* isolates were MDR, and 46% of them showed ESBL pattern. Comparing Loghman Hakim with Imam Khomeini hospital, the MDR and ESBL patterns differed very significantly (30.2% vs.59.3% for MDR, and 33.9% vs.70.4% for ESBL respectively). Interestingly, this significant difference in the patterns between two hospitals was obvious not only in inpatients (26.1% vs.57.1% for MDR, and 32.6% vs.69% for ESBL respectively), but also in outpatients (29% vs.63.6% for MDR, and 63.2% vs.81.8% for ESBL respectively). Generally, the MDR isolates were seen more in recurrent UTI than acute phase (44.6% vs. 33.3% respectively). Expectedly, the rates of the MDR and ESBL-producing isolates were higher in the hospitalized cases compared to the outpatients. However, in the case of acute UTI, there was no difference in percentage of the MDR isolates between hospitalized- and out-patients. The similar results were obtained for the ESBL-producing isolates in the case of recurrence of UTI.

**Conclusion:** It seems that the MDR and ESBL patterns of the UPEC isolates vary significantly from hospital to hospital. Meanwhile, the differences in the rates of the MDR and ESBL-producing isolates between in- and out-patients were not as significant as expected. Moreover, the similarity of these rates in acute and recurrent UTI should be concerned. These diversities in the patterns might also be considered in antibiotic treatment regimens.

**#1983 - MDR and ESBL patterns of E. coli isolates recovered in acute and recurrent episodes of urinary tract infection in out- or in-patients of two referral hospitals in Tehran, Iran**

References

Generate date      03 November 2018 14:48