Identifying antibiotic resistance genes in clinical isolates of *Klebsiella pneumoniae* producing IMP-1 and TEM β-lactamase
Leila Goodarzi¹, Reza Yari¹, Mohsen Mirzaei²

1-Department of Biology, Borujerd Branch, Islamic Azad University, Borujerd, Iran.
2- Department of Laboratory Sciences, Borujerd Branch, Islamic Azad University, Borujerd, Iran.

Abstract

**Aim and Background:** *Klebsiella pneumoniae* is a common cause of β-lactamase-associated infections in hospitals. The present study aimed to determine the frequency of antibiotic resistance genes in *Klebsiella pneumoniae* strains producing IMP-1 and TEM β-lactamase.

**Materials and methods:** The present research identified 94 samples of *K. pneumoniae*, using antibiogram for the phenotypic confirmation of ESBLs. The antibiotic resistance of the isolates and the prevalence of TEM and IMP-1 genes were determined using PCR method.

**Findings:** Of 94 samples, 77.6% were ESBL-positive and 22.3% ESBL-negative. A total of 4.1% of the samples carried the IMP-1 gene and 43.8% the TEM gene, while 43.8% of the samples carried both genes.

**Conclusion:** Given that TEM and IMP-1 genes were commonly present in a large number of the resistant samples, physicians are recommended to use therapeutic measures properly, and to prescribe antibiotics rationally.

**Keywords:** *Klebsiella pneumonia*, Extended-Spectrum Betalactamase (ESBL), TEM, IMP-1, Antibiotic Resistance.

**Corresponding author:**
Department of Laboratory Sciences, Borujerd Branch, Islamic Azad University, Borujerd, Iran.

Email: mirzaei.iaub@gmail.com