Phenotypic and genotypic assay for detection of extended spectrum B-lactamases production by Klebsiella pnemoniae isolates in Emam Reza Hospital in Tabriz, Iran.

Abstract

Objectives of this study were to investigate the prevalence of K. pneumoniae producing ESBLs, to evaluate the susceptibility of K. pneumoniae producing ESBLs towards non-beta-lactam antibiotics and to study the dominant ESBLs gene in Emam Reza hospital. K. pneumoniae producing ESBLs identified by phenotypic and genotypic methods. Polymerase Chain Reaction (PCR) performed for detection of blaSHV, TEM and CTX-M. The findings showed that 43.69%, 13.59%, 7.77%, 11.65% and 23.3% were from UTI, ICUs, surgery ward, lesion infections and RTI, respectively. The results showed that 43.7% of isolates were ESBLs produces. The findings revealed that 26.7%, 6.7%, 20% and 0% of K.pneumoniae producing ESBLs were resistant to amikacin, ciprofloxacin, cotrimoxazol and imipenem, respectively. Thirty-nine blaSHV, seven blaTEM and seven blaCTX-M identified among K.pneumoniae producing ESBLs. The results reflected in cold month resistant to third generation cephalosporins were more than warm months. Generally, frequency of blaSHV was more than blaCTX-M and blaTEM.

Keyword: Phenotypic; Genotypic; K.pnemoniae; Tabriz.