

Minimum Inhibitory Concentration of Cefotaxime by E-test Method on *Klebsiella* in Gorgan

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Abstract

Background and objectives: the increasing use of antibiotics, especially the third generation cephalosporins, is an important factor in the spread of antibiotic resistance in bacteria. The main reason for the development of resistance phenotype such as Extended Spectrum Beta Lactamas (ESBL) is the extensive use of broad-spectrum cephalosporins. In phenotypic survey, the Phenotyping confirmatory test and the minimum inhibitory concentration (MIC) are used. In this study, the prevalence of the isolates resistant to third generation cephalosporin (cefotaxime) was determined based on MIC.

Material and Methods: from September 2010 to September 2011, 75 isolates of *Klebsiella pneumoniae* were collected from the infections of inpatients and outpatients, referred to state and private laboratories of Gorgan. For all of the *Klebsiella pneumoniae* strains, MIC determination using E-test (company Liofilcheme-Italy) was performed.

Results: According to the MIC results, 26 samples (34.6%) are resistant to cefotaxime; 22 isolates are completely resistant to concentration of 256µg.

Conclusion: Because of the importance of risk of becoming ESBL, further studies are needed to clarify the ESBL in the region.

Keywords: ESBL, MIC, *Klebsiella pneumoniae*, Cephalosporin