

Evaluation of Modified CLSI Method for Detection of Extended-Spectrum β -lactamases (ESBLs) in Urinary infection Isolates.

Abstract

Background and Aim: Urinary tract infections are the most common infection in human. The most cases are caused by (ESBLs) producing Entrobacteriaceae. responsible for their resistance to beta-lactam antibiotics and this makes it difficult to treat them. In this study Modified CLSI method was used to evaluate the prevalence of Extended-Spectrum β -lactamases (ESBLs) producing Entrobacteriaceae isolated from Urinary samples.

Method: This study was performed on 350 isolated bacteria from individuals with UTI which admitted to Imam Khomeini hospital in Ardabil. Detection of extended spectrum beta-lactamase producing Entrobacteriaceae performed by using antibiotic disks containing cefotaxim and ceftazidim and boronic acid.

Result: The study included 112 men (32%) and 238 women (68%) respectively. Among the 350 bacterial test in first level 124 were detected as ESBL positive and in the second level 105 (30%) were identified as the ESBL producing and 102 cases of these bacteria were ESBL producing with both ceftazidim and cefotaxim antibiotics disk and 3 cases were ESBL positive with ceftazidim disks. None of them was ESBL positive with cefotaxim discs alone.

Conclusion: Results showed that M.CLSI method has a high ability to determine ESBL producing bacteria and can be used in detecting this kind of entrobacteriaceae. Also prevalence of ESBL positive bacteria is high and mostly resistant to usual antibiotics. This causes increasing antibiotics resistance, mortalities and morbidities of patients. E-coli is the most ESBL producer also the most cause of UTI thus UTI often caused by ESBL positive Entrobacteriaceae.

Key words: Extended spectrum Beta-Lactamases, Entrobacteriaceae, Modified CLSI