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Research article

Extended-spectrum beta-lactamases and antibiotic co-resistance in *E. coli* isolated from patients in a tertiary care hospital

Hemalatha S.^{*1}, Balapriya P.², Thasneem Banu S.³

¹Government Kilpauk Medical College, Chennai, Tamil Nadu, India

²Government Medical College, Omandurar Govt estate Chennai, Tamil Nadu, India

³Madras Medical College, Chennai, Tamil Nadu, India

Abstract

Extended-spectrum β -lactamases (ESBL) producing organisms pose a major problem for clinical therapeutics. The incidence of ESBL producing strains of *E. coli* among clinical isolates have been steadily increasing over the past few years resulting in limitation of therapeutic options.

Aim: To detect the ESBL producers in *E. coli* and determine the antibiotic co resistance of ESBL isolates.

Method: The ESBL phenotype was determined by both screening and phenotypic confirmatory methods among different strains of *E. coli* isolated from clinical samples. The ESBL producing isolates were also studied for the presence of co-resistance with other antibiotics.

Result: A total of 130 strains of *E. coli* were isolated from 953 samples. Phenotypic confirmed ESBL production was detected in 82 (63.08%) of the isolates. The maximum number 56 (66.70%) of *E. coli* isolates from urine were found to be ESBL producers. All the ESBL producing isolates were sensitive to Cefaperazonesulbactam and Imipenem. Among the 82 ESBL producers, 92.68% were resistant to ciprofloxacin, followed by 79.27% to cotrimoxazole, 63.41% to Gentamicin and 20.73% to Amikacin.

Conclusion: All ESBL producers were found to be sensitive to Cefaperazonesulbactam and Imipenem. Highest co resistance was found to be with ciprofloxacin and least to Amikacin.

Keywords: Extended-spectrum β -lactamases, *E. coli*, Screening, Phenotypic confirmatory method, Clinical samples.

*Corresponding author: Dr. Hemalatha, Government Kilpauk Medical College, Chennai, Tamil Nadu, India. Email: roshankrishna03@gmail.com