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## Original article: Bacteriological profile and antibiogram of uropathogens with special reference to extended spectrum beta lactamases (ESBLs) detection in gram negative bacilli

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## Abstract

## Introduction-Urinary tract infections (UTIs) are one of the most common infectious diseases encountered in the clinical practice. Extended spectrum beta lactamases (ESBLs) production in gram negative bacilli, have emerged as a major problem in hospitalized as well as community based patients. ESBLs producing bacteria may not be detected by routine disc diffusion susceptibility test, leading to inappropriate use of antibiotics and treatment failure.

## Aims-The objective of this study was to determine the resistance patterns of the micro-organisms isolated from cases of UTI and to detect ESBLs production in gram negative bacilli.

## Material and Methods-Urinary isolates from symptomatic UTI cases (both in patients and out patients) attending the, Rural Medical College and Pravara Rural hospital, Loni were identified by conventional methods. Antimicrobial susceptibility testing was performed by Kirby Bauer's disc diffusion method. Clinical and laboratory standard institute (CLSI) recommendations to identify potential ESBL producing isolates using standard disc diffusion techniques were followed. All the potential ESBL producers were further subjected to detection of ESBL by two methods-Modified double disc synergy test (DDST) and CLSI phenotypic confirmatory test (PCT).

## Results-Number of urinary isolates from patients with symptomatic UTI was 350 over a study period of one year. *E.coli* was the predominant isolate (57.7%) both in IPD as well as OPD patients. A total of 187(54.84%) gram negative bacilli were found to be potential ESBL producers according to CLSI criteria. ESBL production was confirmed in 41 (21.93%) isolates. Maximum ESBL production was seen in *K. pneumoniae* (22.22%) isolates followed by *E.coli* (13.76%).

## Conclusion-This study showed *E.coli* to be the predominant urinary pathogen isolated from UTI cases. Overall incidence of ESBL producing microorganisms was 21.93%.

## Key Words- Urinary tract infections, uropathogens, antimicrobial resistance, ESBLs