

“DETECTION OF VIRULENCE MARKERS OF UROPATHOGENIC *ESCHERICHIA COLI* FROM URINARY TRACT INFECTIONS AND ITS ANTIMICROBIAL SUSCEPTIBILITY PATTERN”

Abstract

Introduction: Urinary tract infection (UTI) refers to an infection of the urinary tract. They are the most common cause of both community acquired and nosocomial UTI. *Escherichia coli* is the most common cause of urinary tract infections (UTIs), including acute cystitis, pyelonephritis and urosepsis. This study determined the presence of virulence factors in the organism and correlates it with the multi-drug resistance.

Aim: The aim of the following study is to assess the virulence factors of uropathogenic *E. coli* and antibiotic susceptibility pattern.

Subjects and Methods: The study was conducted over a period of 1 year. Urine samples received were processed as per standard microbiological procedures. Out of 676 culture positive urine samples, 278 were found to be *E.coli* and all were subjected to detect virulence factors such as biofilm, hemolysin, hemagglutination, serum resistance, gelatinase and siderophore production were studied. The antimicrobial susceptibility was done as per Clinical and Laboratory Standard Institute Guidelines.

Statistical Analysis Used: The data was analyzed by using SPSS (Statistical Package for the social sciences) and $P \leq 0.05$ was considered to be significant.

Results: The prevalence of UTI was 34%. Females (59.35%) were more affected with UTI than males(40.6%).Biofilm formation was seen in 42.8%, Hemolysin production was seen in 59.3%%, hemagglutination in 59.7%%, serum resistance in 58.63%, gelatinase in 37% and siderophore production in 39.9% isolates. Imipenem(94.6%) followed by Nitrofurantoin(90.2%) and Piperacillin-Tazobactam(89.92%) were highly sensitive. 68% were ESBL producers and 21% isolates were MDR.

Conclusions: Therefore, the knowledge of virulence factors of *E. coli* and their antibiotic susceptibility pattern will help in better understanding of the organism and in the treatment of UTI.

Keywords: UTI, UPEC, Virulence Markers, ESBL, MDR