

IN-VITRO STUDY OF VARIOUS ANTIMICROBIAL AGENTS AGAINST URINARY TRACT ISOLATES

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ABSTRACT

The study was conducted to determine the sensitivity pattern among the isolates collected from 100 patients with urinary tract infections. Forty three percent were *Staphylococcus saprophyticus*, 19% *Staphylococcus aureus*, 4% *Micrococcus*, 5% *Streptococci*, 11%, *E. coli*, 4% *Enterobacter*, 9% *Serratia*, 2% *Klebsiella*, 1% *Proteus mirabilis*, 1% *Pseudomonas* and 1% *Candida*. Ofloxacin was most effective against both Gram-negative bacilli and Gram-positive cocci. Enoxacin and gentamicin were equally effective against Gram-positive urinary tract isolates, while enoxacin was more effective than gentamicin against Gram-negative bacilli. Tobramycin was the second most effective agent against Gram-negative bacilli, followed by norfloxacin, enoxacin, piperimide acid cefclor co-trimazol, nalidixic acid, amoxicillin and cefazolin. Co-tromoxazole was 47.88% and 42.86% effective against both Gram-positive and Gram-negative urinary tract pathogens.

Keywords:-Antibacterials, Urinary tract isolates, Gram-positive and Gram-negative pathogens.

INTRODUCTION

Bacterial resistance to antimicrobial agents has been increasing over the last few years due to many factors, including overall increased in number of antibiotics prescriptions. Urinary tract infections were the 2nd in frequency to respiratory tract infections (Davey., *et al.*, 1996). Different investigators reported the prevalence of *E. coli* in urinary tract infections 7 – 90 % (Linda and Freston, 1980; Anwar *et al.*, 1984; Forooqi., *et al.*1989). Other Gram-negative bacteria responsible for the infection were *Proteus*, *Enterobacter*, *Pseudomonas*, *Serratia* and *Klebsiella* (Linda., *et al*1985; Nicole., *et al.*, 1988; Vincet and Andriol, 1987).

Among the Gram positive cocci, the important pathogens were *Staphylococcus saprophyticus*, *Staphylococcus aureus*, *Streptococci* and *Staphylococcus epidermidis* (Linda *et al* 1985; Vincet and Andriol, 1987; Nicole *et al.*, 1988; ; Orrett and Shurland, 1998 Martineau *et al.*, 2000). Lutter and co-workers (2005) studied among 361 patients with urinary tract infections (UTIs) who received prophylactic antibiotics, admitted to

hospital had more resistant isolates to third-generation cephalosporins. These patients were more appropriately treated with aminoglycosides.

The indiscriminate use of antibiotics, which has greatly increased the development of resistance in UTI isolates. The main purpose of this study was to know the most prevalent isolate responsible for urinary tract infection and to evaluate the most effective antimicrobial agent. The study was focused mainly on the antimicrobial susceptibility pattern of bacterial isolates at various hospitals in Pakistan.

MATERIALS AND METHODS

Collection of Samples:

A total of 100 patients (male and female) with urinary tract infection and thirty normal controls were selected in present study. All the patients were provided wide mouthed, tightly closed sterilized bottles. The patients were asked to wash the hands thoroughly with antiseptic, then to clean the urethral meatus in male and to wash the vulva with detol water in female. They were asked to destroy the first