

CURRENT ANTIBIOTIC SUSCEPTIBILITY PATTERN IN KHYBER TEACHING HOSPITAL PESHAWAR (NWFP) PAKISTAN.

Abdul Jabbar Khan¹, Abdur-Rahim Khan², Abdul Haleem Shah² and Sanaullah Khan³

¹Gomal Centre of Biochemistry and Biotechnology, Gomal University, Dera Ismail Khan (NWFP) Pakistan

²Department of Biological Sciences, Gomal University, Dera Ismail Khan (NWFP) Pakistan

³Kohat University of Science and Technology, Kohat (NWFP) Pakistan

ABSTRACT

Despite of advancement in the field of medical technology, the power of antibiotics to control bacterial infections, particularly in hospitals are weakened with the passage of time. The outcome that infections are increasing in our society at alarming rate is correlated with increase in the number of resistant bacteria. This resistance is associated with significant mortality. Keeping in view this idea, a study was conducted in clinical laboratory of microbiology section of Khyber Teaching Hospital, Peshawar, N.W.F.P., Pakistan. For this purpose, two consecutive analyses, retrospective and prospective were conducted at the same time. The results were studied by using the recommendations of National Committee for Control of Laboratory Standards (NCCLS). Out of 175 prospective isolates, 126(72%) were Gram negative rods, 36(20.5%) Gram positive cocci and 13(7.4%) polymicrobial growth. Among the Gram positive cocci, *Staphylococcus aureus* was the most prevalent pathogen 28(77.8%) followed by *Staphylococcus epidermidis* 7(19.4%) and *Streptococci* 1(2.8%). Among the Gram negative, *E.coli* was the most prevalent pathogen 58 (46%), followed by *Enterobacter spp.* 27(21.4%), *Citrobacter spp.* 24(19.4%) and *Pseudomonas spp.* 10(7.9%), while, of the 738 retrospective isolates, 490 (66.3%) were Gram negative rods, 202 (27.3%) Gram positive cocci and 46(6.2%) yield polymicrobial growth. In addition, in retrospective analysis, among Gram negative rods, *E-coli* was the most predominant pathogen 257(52.4%), followed by *Citrobacter spp.* 41(8.3%) and *Proteus* 21(4.2%). In this retrospective analysis, among Gram positive cocci, coagulase positive *Staphylococcus aureus* was the predominant pathogen 168(83.1%), followed by *Staphylococcus epidermidis* 25(12.3%) and *Streptococci* 6(2.9%). In this study, *Pseudomonas spp.* was found the most common species. In both set of study, all these isolates expressed higher resistance to ten antibiotics out of seventeen such as velosef, fortum, ceftriaxone, cefizox, cefipime, erythromycin, clarithromycin, enoxacin and ciprofloxacin. In both the sets of analysis, more than 90% and 84% of the isolated pathogens were sensitive to imipenem and 80% and 56% to Meropenem. Majority of the isolates were resistant to cephalosporin group. The major factors are free availability of antibiotics, a broad and high dose in initial treatment, prescription of antibiotics without sensitivity report, de-escalation according to clinical course and limitation of treatment for 3-5 days.

INTRODUCTION

Infections produced by microorganisms have presented continuing challenges to the antimicrobial therapy with the steady emergence of antibiotic resistant strains. The spectrum of isolates among febrile neutropenic patients in Pakistani population appears to be shifting toward Gram positive microorganisms (Butt *et al.*, 2004). Acute respiratory Infections are the leading cause of death in young children in Pakistan, responsible for 20-30% of all child deaths under the age of five years. Rising antimicrobial resistance among commonly used and low cost oral agents is of

significant concern (Khan *et al.*, 2004; Ahmad, 2004). Widespread antimicrobial resistance amongst respiratory pathogens to commonly used, affordable antibiotics have made the treatment of acute respiratory tract in developing countries very difficult (Khan *et al.*, 2004). In our country, multidrug resistant isolates of *E.coli* are much higher to 3rd generation cephalosporin and quinolones (Iqbal *et al.*, 2002). *E.coli* was the commonest (50.97%) of all the isolates to cause urinary tract infection (UTI), followed by *Klebsiella spp.* (16.0%) and *Pseudomonas aeruginosa* (9.03%). *E.coli* was highly susceptible to ofloxin and