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Session: Antibiotics

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Room: Poster & Exhibition Area

Multidrug resistant *Escherichia coli* isolated from urinary tract infections in a tertiary care hospital, Bangalore, South India

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Background: *Escherichia coli* is the most common etiological agent in both community acquired and hospital acquired urinary tract infections (UTI). Emergence of multidrug resistance (MDR) among *E.coli* isolates is quite alarming. The goal of the study was to define the current prevalence and phenotypes of MDR *E. coli* among UTI samples in our hospital.

Methods: Urine samples from 1225 patients received in the microbiology department of our hospital were processed. Wet mount to detect presence of pus cells and bacteria was done. All the samples were inoculated on to Hi Media Hi chrome agar and plates incubated at 37°C for 18-24 hours. Growth showing significant bacteriuria ($\geq 10^5$ cfu/ml) was identified by the colour imparted by the colonies. Further identification was done by the standard biochemical procedures. Antibiotic sensitivity was performed by disc diffusion method as per CLSI guidelines. Various classes of antibiotics were included in the sensitivity panel.

Results: Out of 1225 samples processed, significant bacterial isolates were obtained in 357 (29.1%). The total number of *E.coli* isolated were 179 (50.1%). More number of females (56.9%) had significant UTI due to *E.coli* compared to males (43%). The total number of samples received in pediatric age group was 60. *E.coli* comprised 58.3% of the pediatric isolates. Total numbers of multidrug resistant *E.coli* isolates were 148 (82.6%). High degree of resistance was observed to amoxicillin (93.2%) and amoxicillin-clavulanic acid (90.5%). More than 80% sensitivity was seen only to imipenem (98.4%), amikacin (83.3%) and nitrofurantoin (86.6%).

Conclusion: Multidrug resistant strains of *E.coli* are widely prevalent and isolation of the same in the community acquired urinary tract infections is a matter of grave concern. Antibiotics like imipenem and amikacin require hospitalization, parenteral administration, drug monitoring for toxicity, all of which incurs high cost to the patient and cannot be used as the first line of treatment. Judicious use of antibiotics is the need of the hour to prevent spread of the multidrug resistant strains in the community

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A clinico-microbiological profile of carbapenem resistance among nosocomial infections in a tertiary care hospital

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Background: Carbapenem resistance is a serious concern in treatment of nosocomial infections. Recently there has been an increase in the incidence of resistance to this class of drugs; considered to be the last resort means of fighting infections resistant to regular broad spectrum antibiotics. Our study aims to find the morbidity and mortality in the presence of resistance to carbapenems and the prognosis in such cases.

Methods: Study was done over January to June 2011 to identify various samples of patients admitted in the hospital whose cultures showed resistance to any carbapenems. Patients included in this study were evaluated for site of infection, specimen, organism isolated, prior use of broad spectrum antibiotics, presence of multi organ dysfunction (MODS) and outcome. Further associations were sought between the age, site of sample collection, species of the microbe and duration of ICU stay.

Results: A total of 21 patients met the criteria, mean age being 37.6 years. Majority of the positive cultures are endotracheal tube cultures-9 (33%), Blood-7 (25%), Wound tissue cultures-4 (14%). The most common organisms isolated were *Acinetobacter* (40%) and *Pseudomonas* (37%). Eighteen (85.7%) patients had previous exposure to broad spectrum antibiotics. MODS was found in twelve patients (57%). The most common comorbid illness found in these patients are, Diabetes mellitus and its complications (14%), Heart disease in two cases (9.5%), CKD and HIV in one case each (4.7%). Eleven patients (52.3%) were put on ventilator support. The primary diagnoses in the study in descending order of occurrence are: Lung disease- 6 (28.5%), GI disease-5 (23.8%), Sepsis-5 (23.8%), MODS-2 (9.5%), Meningoencephalitis- 2 (9.5%), OP Positioning-2 (9.5%). The mortality in the study was 19 patients (90.4%).

Conclusion: The prevalence of carbapenem resistant strains of *Acinetobacter* and *Pseudomonas* is found to be high in nosocomial infections, with prolonged ICU admission. Endotracheal intubation is a major risk factor and the Endotracheal tube secretions the most common specimen to show the resistance pattern. Diabetes is found to be a comorbid illness in a significant proportion of patients. There are very few drugs to treat patients suffering from infections resistant to carbapenems, with heightened side effects hence, strict infection control guidelines and careful use of antibiotics should be followed.

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