



ABSTRACT

Carbapenemase enzyme hydrolyses carbapenems which are used to treat resistant bacterial infections thus leading to carbapenem resistance. Genes responsible for these enzymes are on transmissible plasmids that results in transfer of this resistance mechanism among different species of bacteria. This study was aimed to determine the frequency of carbapenemase and metallo beta lactamase producing *Klebsiella* and *E. coli* in children and to find out the sensitivity pattern with different antibiotics to identify the most suitable antibiotic for these bacteria.

A total number of 17,651 samples from suspected cases of bacterial infections were processed. Majority of these cases were non repetitive samples of male children (62.1%) under 5 years of age (42.5%), presenting with UTI (32.1%), mainly from urology/ nephrology ward (29.9%). There were 1168 *Klebsiella* and *E.coli* strains isolated from these specimens, out of which, 651 (55.4%) were *Klebsiella* and 517 (44.6%) *E. coli* including 134 carbapenem resistant (CR) strains. All 134 (100%) carbapenem resistant strains proved to be carbapenemase producers with Modified Hodge Test while MBL was detected in 131 (97.8) by Double Disc Synergy Test and Combined Disc Test. These organisms were highly resistant to amikacin, aztreonem, co-amoxiclave, cefotaxime, ceftriaxone, cefuroxime, cefixime, ciprofloxacin, gentamycin, tazobactam-piperacillin, sulbactam-cefoperazone and rifampicin. These strains showed good sensitivity to colistin 87.9%, chloramphenicol 59.8% and fosfomycin 31%.

Certain risk factors contributing to the increasing number of CP strains and specially MBL type include irrational use of antibiotics, poor infection control, hospitalization in endemic areas and poor knowledge of ever increasing resistance mechanism thus worsening the current situation.