

## **ANTIMICROBIAL RESISTANCE OF *ESCHERICHIA COLI* ISOLATED FROM HUMAN FAECAL SAMPLES IN THE KANDY DISTRICT**

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Antimicrobial resistance is an emerging public health concern and multidrug resistant Gram negative bacteria is considered a major threat. It is partly due to their ability to acquire and disseminate antibiotic resistance faster than Gram positive bacteria through plasmids. This study was designed with the objective of determining the antimicrobial resistance pattern of faecal *E.coli*, being an useful indicator organism to monitor the emergence of antimicrobial resistance

Sub samples from all stool samples submitted to the Microbiology laboratory of the Teaching Hospital, Kandy, during the period March 2013 to October 2013 were analyzed. One hundred samples were collected. Samples were initially cultured on MacConkey agar and XLD agar, incubated at 37°C for 24 hrs. *E. coli* was identified using colony morphology and conventional biochemical tests. The isolation rate for *E.coli* was 59%. The antimicrobial sensitivity test (AST) was performed on all isolates using the Kirby–Bauer disk diffusion method. All procedures were conducted according to the standard operating protocols of Clinical Laboratory Standard Institute. The isolates were tested for the susceptibility to ampicillin, amoxicillin, streptomycin, gentamicin, cephalothin, tetracycline, ciprofloxacin and chloramphenicol.

The proportions of isolates resistant to the tested antimicrobials were, ampicillin 86%, amoxicillin 92%, streptomycin 51%, gentamicin 37%, cephalothin 64%, tetracycline 58%, ciprofloxacin 75% and chloramphenicol 27%. Approximately 60% of faecal isolates were found to exhibit multi drug resistance for more than four antimicrobials. The highest level of resistance was observed for amoxicillin and ampicillin, which could be due to the frequent use of the same by patients, sometimes without medical advice.

A high level of resistance was observed for many commonly used antibiotics, including broad spectrum agents. The rate of multidrug resistance was also markedly higher, where nearly 60% of the isolates were resistant to more than four antibiotics. Among the less frequently used antibiotics, chloramphenicol was the most effective drug followed by gentamicin. These results indicate that antibiotic resistance is alarmingly high among the faecal *E.coli* from humans. Therefore surveillance programmes are essential to screen and monitor the emergence of antibiotic resistance.

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