

COEXISTENCE OF QUINOLONE RESISTANCE AND EXTENDED SPECTRUM BETA LACTAMASE PRODUCTION IN CLINICAL ISOLATES OF *ESCHERICHIA COLI* IN A TERTIARY CARE CENTRE

Background: Extended spectrum- β lactamase(ESBL) producing *E.coli* has increased markedly in recent years. The plasmids that encodes ESBL also carries other resistant genes. The plasmid mediated quinolone resistance(PMQR) are more prevalent among the ESBL producing strains. This study was designed to evaluate the quinolone resistance among ESBL producing *E.coli*.

Materials and Methods: A total of 100 consecutive isolates of *E.coli* from various clinical specimens were collected and evaluated phenotypically for ESBL production by Combined Disc Diffusion Test(CDDT), Double Disc Synergy Test(DDST) and E-test; quinolone resistance by Disc Diffusion and E-test. Coexistence of quinolone resistance among ESBL-*E.coli* were identified and these strains were further analyzed for the presence of PMQR genes such as *qnrA*, *qnrB* and Various risk factors associated with these resistant strains were analyzed.

Results: ESBL were found in 63%(63/100) of *E.coli* isolates. Out of the 63 ESBL isolates, 68% (n=43) were resistant to quinolones. Among the 43 isolates with coresistance of quinolone and ESBL, 51%(22/43) isolates harbored *aac-(6')-Ib-cr* gene, 11.63%(5/43) had both *qnrA* and *aac-(6')-Ib-cr* gene, 14% showed both *qnrB*

and *aac-(6')-Ib-cr* gene. Imipenem showed highest sensitivity of 95 % towards these resistant strains.

Conclusion:

This study highlights the high prevalence of quinolone resistance among ESBL producing isolates. The co-resistance is a major challenge in management of infections due to these resistant organisms. Although carbapenems are the treatment of choice for these organisms, carbapenems resistance are emerging worldwide. Early detection of the resistance helps in initiating control measures in spread of these organisms.

Keywords : ESBL, quinolone resistance, *E.coli*, PMQR