

Post-Covid-19 Era: What is Next?

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Abstract

Antimicrobial resistance (AMR) is a natural phenomenon in bacteria which becomes a threat for health-care settings around the world. A concerted global response is needed to tackle rising rates of antibiotic resistance, without it we risk returning to the pre antibiotic era. As bacteria evolve very fast according to the environment in which they inhabit via developing different defence mechanisms to combat with the noxious agents like different classes of antibiotics including carbapenems. This results into treatment failure and clinical complications. Global emergence of antibiotic resistance due to bacterial multidrug efflux pump systems are a major and common mechanism of intrinsic antimicrobial resistance employed by bacteria which are spreading rapidly due to over use or misuse of antimicrobial agents. This review mainly focusses on the transcriptional expression of efflux pump system AcrAB-TolC, local regulatory genes (AcrR and AcrS), mediating carbapenem resistance in clinical isolates of *Escherichia coli* under antibiotic stress, a genetic interplay study between intrinsic and acquired antibiotic resistance mechanisms along with a brief summary on high risk factors and prevalence of urinary tract infections by multidrug resistant Uropathogenic *Escherichia coli*.

Keywords: Antimicrobial resistance, carbapenems, Uropathogenic *Escherichia coli*, AcrAB, UTIs

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