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"Is the urine microflora turns to MDR?" A Case study

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Case Study: ***Background***: Antibiotics are manufactured at an estimated scale of about 100,000 tons annually worldwide and their use had a profound impact on the life of bacteria on earth. Multidrug resistant an ecological phenomenon stemming form the response of bacteria to the widespread use of antibiotics and their presence in environment. Bacteria can resist antibiotics as a result of chromosomal mutation or inductive expression of latent chromosomal gene or by transformation, transduction and conjugation. Hospitals, a critical component of antibiotic resistance problem worldwide has resulted in nosocomial infections with highly resistant bacterial pathogens.
Method: Non-repeat samples of urine from different patient origin have kidney abnormalities were collected from civil hospital, Jalgaon (Maharashtra, India) and subjected for microbiological isolation of organisms. Direct dilution and plating were carried out for the isolation of urine isolates. Antimicrobial susceptibilities of the isolates were determined by disc diffusion methods. Minimum Inhibitory Concentration (MIC) were determined using a broth micro-dilution technique in LB medium buffered to pH 7.0 with phosphate buffer. The identification and characterization of isolates was done.
Result: The microbial isolates were obtained from different patient having kidney abnormalities. All the isolates tested in the present study for antibiotic susceptibility were multidrug resistant (MDR). Concomitant high resistance to Chloramphenicol, cotrimoxazole and amoxacillin was present in 91.89, 81.08 and 70.27% of the urine isolates and 90.0% of chloramphenicol, cotrimoxazole and ampicillin respectively.
Conclusion: The present study showed that bacterial species isolated from urine samples settings harbour multidrug resistant pattern. A close association between the plasmid profile and antibiotic resistance pattern could be derived. The presence of plasmid mediated MDR resistance in these isolates was notable.
Keywords: Multidrug resistant (MDR), Minimum inhibitory concentration (MIC), Antibiotics.