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Detection of biofilm formation in urinary isolates: need of the hour

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ABSTRACT:

The purpose of the study was to estimate biofilm (BF) formation in urinary catheterized patients, by comparing three methods i.e. Tissue culture plate method (TCP), Congo Red Agar method (CRM) and Tube method (TM) and to study the antimicrobial resistance pattern in BF producing and non BF producing isolates. A total of 130 urinary catheterized patients were taken as the study group. From one milli litre of urine sample isolates > 102 colony forming units per milli litre were screened for the detection of BF by TCP, TM and CRM. Antibiotic sensitivity test for both BF producing and non BF producing bacterial and fungal isolates were done as per CLSI guidelines. From 130 urine samples in our study group, 55 samples grew microorganisms of significance, of which 11 samples were poly-microbial in nature. Of these biofilm production was seen in 49 microorganisms (89.09%) by any of the three methods used. TCP method picked up 69% of biofilm producers as compared to TM and CRM which picked up only 36% and 27% biofilm producers respectively. Our study reveals TCP method as the more dependable one as compared to TM and CRA methods for the quantitative biofilm detection, so it can be recommended as a screening method in laboratories.

Keywords:
Biofilm, Biofilm detection, Congo Red Agar.

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