

Coagulase Negative Staphylococci: Phenotypic Characterization and Antimicrobial Susceptibility Pattern

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Abstract : Introduction: Coagulase-negative staphylococci (CoNS) are the normal commensal of human skin and mucous membranes. The study was carried out to study the prevalence of CoNS among clinical isolates, to characterize them up to species level and to compare the three conventional methods for detection of biofilm formation. Objectives: to characterize the clinically significant coagulase-negative staphylococci up to species level, to compare the three phenotypic methods for the detection of biofilm formation and to study the antimicrobial susceptibility pattern of the isolates. Methods: CoNS isolates were obtained from various clinical samples during the period of 1 year. Characterization up to species level was done using biochemical test and study of biofilm formation was done by tube adherence, congo red agar, and tissue culture plate method. Results: Among 71 CoNS isolates, seven species were identified. *S. epidermidis* was the most common species followed by *S. saprophyticus*, *S. haemolyticus*. Antimicrobial susceptibility pattern of CoNS documented resistance of 90% to ampicillin. Resistance to cefoxitin and ceftriaxone was observed in 55% of the isolates. We detected biofilm formation in 71.8% of isolates. The sensitivity of tube adherence method was 82% while that of congo red agar method was 78%. Conclusion: Among 71 CoNS isolated, *S. epidermidis* was the most common isolates followed by *S. saprophyticus* and *S. haemolyticus*. Biofilm formation was detected in 71.8% of the isolates. All of the methods were effective at detecting biofilm-producing CoNS strains. Biofilm former strains are more resistant to antibiotics as compared to biofilm non-formers.

Keywords : CoNS, congo red agar, bloodstream infections, foreign body-related infections, tissue culture plate

Conference Title : ICMVM 2017 : International Conference on Molecular Virology and Microbiology

Conference Location : Bangkok, Thailand

Conference Dates : December 18-19, 2017