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Detection of icaAD Gene and Biofilm Formation in Staphylococcus aureus Isolates from Wound Infections

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Abstract:

Wound infections are a common cause of staphylococcal infections. An ability of S.aureus is to adhere and form biofilm on host surfaces. Biofilm is an exopolysaccharide, a slime matrix around multiple layers of cells and is mediated by expression of the icaADBC operon. The present study evaluated the biofilm forming capacity and the presence of icaAD gene among S.aureus isolated from wound infections. Slime production assay was performed by cultivation on Congo Red Agar plate. In addition, Quantitative biofilm formation determined by microtiter plate assay PCR method used for detection of icaAD gene. Fifty strains were identified, 54% of the isolates produced black colonies on CRA plate, 52% were positive biofilm forming, and all strains carried the icaAD gene. Regarding the ability of S.aureus to form biofilms helps the bacterium to survive hostile environments within the host, suggests that biofilm production is a risk factor for infection. It is important in rapid diagnosis and treatment biofilm forming strains, because biofilm formation may lead to increased antimicrobial resistance and create a significant impediment to wound healing.

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