ABSTRACT

THE CORRELATION BETWEEN icaA AND icaD GENES WITH BIOFILM FORMATION Staphylococcus epidermidis IN VITRO

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Objective: to identify icaA and icaD genes in S. epidermidis and correlate their presence with phenotypic biofilm formation in vitro.

Method: Staphylococcus epidermidis isolates were collected from patients and healthy volunteers, then the icaA and icaD were detected by Polymerase Chain Reaction. Biofilm phenotype was determined by Congo red agar test. The results were analyzed statistically by SPSS 23.0.

Result: A total of 40 S. epidermidis isolates were collected consist of 20 clinical isolates and 20 normal flora isolates. icaA genes were positive in 5 isolates (12,5%), and 8 isolates (20%) were positive for icaD genes, both of genes positive in 3 isolates. All S. epidermidis with icaA or icaD gene were positive biofilm formation, however there were 15 isolates (42,9%) without ica genes and 12 isolates (37,5%) without icaD genes showing biofilm formation. Fifty percent of S. epidermidis isolates showed biofilm formation capacity in CRA. Fisher’s Exact test revealed significant correlation between icaA gene and icaD gene with biofilm formation capacity (p = 0,047 (p < 0,05)) and p = 0,03 (p < 0,05) respectively.

Conclusion: icaA and icaD genes have a statistically significant correlation with regards to biofilm formation in S. epidermidis. There are others biofilm formation mechanism that ica independent

Keywords: ica genes, Biofilm, Staphylococcus epidermidis