TITLE: RESISTANCE PROFILES AND BIOFILM FORMATION BY *Staphylococcus capitis* AND *Staphylococcus hominis* ISOLATED FROM BLOOD CULTURES

AUTHORS: OLIVELLA, J.G.B.; VASCONCELOS, R.S.; SILVA-SANTANA, G.; NOGUEIRA, B.A.; SUED-KARAM, B.R.; PEREIRA-RIBEIRO, P.M.A.; FRACALANZZA, S.E.L.; MATTOS-GUARALDI, A.L.

INSTITUTION: UNIVERSIDADE DO ESTADO DO RIO DE JANEIRO, RIO DE JANEIRO, RJ. (RUA BOULEVARD 28 DE SETEMBRO, 77, 3º ANDAR, CEP 20551-030, RIO DE JANEIRO – RJ, BRAZIL)

ABSTRACT:

Staphylococcus capitis has been considered a commensal since it is rarely reported as a pathogen in healthy adults. Recent reports indicate its emergence as a major pathogen causing nosocomial and bloodstream infections. *Staphylococcus hominis* is part of the normal skin flora and is the third most frequently isolated species of coagulase-negative *Staphylococcus* from bacteremia. They have multiple resistance to antimicrobials and the ability to produce biofilm, becoming an emerging species when related to nosocomial infections. The study aimed to characterize resistance profiles and investigate biofilm production, as well as the presence of *the icaA* gene in *S. capitis* and *S. hominis* isolates. Twelve strains of *S. capitis* and six strains of *S. hominis* were selected from blood culture and their identification confirmed by MALDI-TOF. The resistance profile for antimicrobials and the minimum inhibitory concentration was performed according to CLSI (2019). Furthermore, the quantitative assessment of biofilm production on polystyrene microtiter plates and the detection of the *ica*A gene were made according to Pereira-Ribeiro (2019). Among *S. capitis* and *S. hominis* strains, 66.67% and 100% were multidrug-resistant, respectively. All the strains were oxacillin resistant and when related to vancomycin, 83,33% were susceptible, being one strain of *S. capitis* (8,33%) and two strains of *S. hominis* (33,33%) intermediates. All strains of *S. capitis* produced adherent biofilm in different intensities, while only 33,33% of *S. hominis* strains showed this ability. However, 91,67% of *S. capitis and* 60,00% of *S. hominis* strains were positive for the *ica*A gene. In conclusion, both *S. capitis* and *S. hominis* have been housing a diversity of antimicrobial resistance, acting as a reservoir, and having the capacity to spread this to other nosocomial bacteria. When associated with biofilm production, these species can be a potential threat, creating difficulties in the antimicrobial action and limiting treatment options. These mechanisms assist bacteria in the development of invasive diseases, requiring further studies to better understand of these associated infections.

Author: Julianna Giordano Botelho Olivella – juolivella@hotmail.com

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