

TITLE: PREVALENCE, ANTIMICROBIAL SUSCEPTIBILITY AND DETECTION OF PANTON-VALENTINE LEUKOCIDIN (PVL) GENES IN *Staphylococcus aureus* ISOLATED FROM NASAL COLONIZATION IN PARTURIENTS

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ABSTRACT:

Staphylococcus aureus strains constitute a major public health concern worldwide and the anterior nares are the main colonization site in humans. Nasal colonization of parturients can facilitate the development of mastitis and breasts abscess, increasing the risk of breastfeeding interruption. Furthermore, it contributes to skin and soft tissues infections in newborns. The presence of Pantone-Valentine leukocidin (PVL), which is a relevant virulence factor produced by this pathogen, can aggravate infections. This study aimed to determine the prevalence of nasal colonization by *S. aureus* in parturients, antimicrobial susceptibility profile, and the presence of *lukS-PV* and *lukF-PV* genes, which encodes PVL, in these strains. From March 2018 to March 2019, 306 nasal swabs were collected in parturients up to a maximum of 48 hours after delivery at Hospital Universitário Cassiano Antônio Moraes (HUCAM). The detection of the *nuc* gene, used to identify the *S. aureus* species, and the *lukS/F-PV* genes were performed by PCR technique. The disk diffusion method was used to determine the antimicrobial susceptibility to ceftiofur, ciprofloxacin, erythromycin, benzylpenicillin, gentamicin, linezolid, clindamycin, tetracycline, trimethoprim-sulfamethoxazole, and mupirocin. Forty-six *S. aureus* strains were isolated, with a colonization rate of 15%. Of these, seven (15.2%) were methicillin-resistant (MRSA). Most strains were resistant to penicillin (86.9%) and erythromycin (54.4%). Moreover, 15.2% of these were resistant to gentamicin and ciprofloxacin. All strains were sensitive to trimethoprim-sulfamethoxazole, mupirocin, and linezolid. Two (4.3%) strains carried the PVL genes, one sensitive and the other resistant to methicillin. In this study, a considerable prevalence of nasal colonization by *S. aureus* in parturient was found, with emphasis on MRSA strains. Despite the sensitivity to most antimicrobials, the high rates of resistance to erythromycin must be highlighted. The presence, even though reduced, of the *lukS/F-PV* genes in strains colonizing parturients is a matter of concern, since there is a possibility of transmission to the neonate and because both are more susceptible to infections, especially of skin and soft tissue. Our results demonstrated the relevance of surveillance in nasal colonization by *S. aureus* in parturients.

Keywords: *Staphylococcus aureus*, nasal colonization, Pantone-Valentine leukocidin, resistance, parturients