

TITLE: ISOLATION OF RESISTANT STAPHYLOCOCCUS AUREUS FROM THE ENVIRONMENT IN A VETERINARY TEACHING HOSPITAL.

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ABSTRACT: *Staphylococcus aureus* (*S. aureus*) are one of the components of the microbiota, they may be present in patients and in a veterinary hospital environment. Their presence in the hospital environment, hands and instruments, indicates the possibility of circulation of these strains between the environment, animals and humans, in addition, multiresistant strains can circulate among companion animals where potentially zoonotic species may present risks to public health. Resistance to antibiotics has been developed by mutations in genes or by the acquisition of resistance genes from other bacteria of the same species (or even others). Methicillin resistance is determined by a chromosomal gene (*mecA*), which codes for modifications in the beta-lactam antibiotic receptor, where the penicillin binding protein will have a low affinity for the antibiotic. Samples were collected through swabs of materials and equipment at the hospital. *S. aureus* was identified in 7.6% (21/276) of the samples collected, and of the 21 strains isolated, 4 (19.0%) carried the *MecA* gene. MRSA are all strains of *S. aureus* that express the *mecA* gene. Detection was performed by the disc-diffusion test with the cefoxitin disc (30µg), according to the guidelines of the Clinical and Laboratory Standards Institute (CLSI). PCR was also performed for *mecA* gene detection. Four strains harboring the *mecA* gene, however, only two expressed the phenotypic resistance to cefoxitin and were characterized as MRSA. No multidrug resistant strains were found, however, some strains were resistant to antibiotics of different categories. An isolate (strain 18) present on a patient care table was identified as methicillin resistant *S. aureus* with intermediate sensitivity to vancomycin (VISA). The circulation of this strains in the veterinary hospital environment is worrisome because the World Health Organization (WHO) classifies this profile as a high priority according to its list of pathogens according to the severity of the infections they cause and the number of antibiotics available for treatment. Our observations suggest the need for containment measures (good antisepsis practices) to avoid the possible transmission of resistant bacterial agents in the veterinary hospital environment.

Keywords: MRSA,VISA, nosocomial infections, bacterial drug resistance.