

TITLE: PHENOTYPICAL AND GENOTYPICAL CHARACTERIZATION OF MRSP AND MRSS ISOLATED FROM INFECTIONS IN DOGS

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ABSTRACT:

Staphylococcus are important pathogens of humans and animals, being involved in several types of infections, where the emergence of multiresistant strains presents itself as a major public health problem. The Methicillin Resistant *Staphylococcus* spp. (MRS) strain is widely distributed throughout the world, being very well characterized in human medicine, but still emerging in veterinary medicine. The objective of this study was to detect the genes of resistance to beta-lactam drugs and to determine the appearance of strains of Methicillin Resistant *Staphylococcus* spp. Seventeen samples of *Staphylococcus* spp. obtained from infections of dogs treated at the Hospital Veterinário Universitário (HVU) of the Universidade Estadual de Maringá (UEM), from 2013 to 2016. The Minimum Inhibitory Concentration (MIC) was determined according to the recommendations of the Clinical Standard Laboratory Institute (CSLI) and the oxacillin concentrations tested were 256 to 0.5 µg / mL. 15 *Staphylococcus pseudintermedius* and 2 *Staphylococcus schleiferi* were identified from clinical infections in dogs. 14 strains of the *S. pseudintermedius* were classified as MRSP (*Staphylococcus pseudintermedius* methicillin resistant), where 12 strains were positive for the *mecA* and *blaZ* genes and 2 strains only for the *mecA* gene, a strain was only positive for the *blaZ* gene. The two strains of *S. schleiferi* were classified as MRSS (*Staphylococcus schleiferi* resistant methicillin) where one presented the *mecA* gene, and another was positive for both genes. At MIC, for *S. pseudintermedius*, the concentration ranged from 2-256 µg / mL, with the highest concentrations between 16-64 µg/mL, being considered resistant to oxacillin (MIC ≥4 µg/mL). For the two *S. schleiferi* samples, the strain that was positive only for the *mecA* gene obtained a MIC of 16 µg/mL, while the positive sample for both genes obtained a concentration of 128 µg/mL. MRS are increasingly common in both human and veterinary medicine, mainly due to the indiscriminate use of antibiotics. The treatment of clinical infection and patient care should consider these microorganisms of importance in public health, since the transmission of resistance between bacteria can occur inter-species.

Keywords: MIC, beta-lactam drugs, MRS, dogs.