

TITLE: ANTIMICROBIAL RESISTANCE OF *STAPHYLOCOCCUS* SPECIES ISOLATED FROM DOGS AFFECTED WITH PYODERMA AND OTITIS

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ABSTRACT:

Staphylococcus species are associated with a wide variety of skin and soft tissue infections. In dogs, they are the main cause of conditions like pyoderma and otitis and *Staphylococcus pseudintermedius* and *Staphylococcus schleiferi* are the main isolated species in these infections. Of concern is the emergence of antimicrobial resistance among species related to dogs as, for example, the “Meticillin Resistant *Staphylococcus pseudintermedius*” (MRSP). And also, the resistance related to species of coagulase negative *Staphylococcus*. The presence of resistant strains in dogs is a matter of great concern, first because of the limited options of treatment in the veterinary medicine. And second, because these species can serve as a reservoir for resistance genes and pose the risk of zoonotic transmission. This study aimed to investigate the antimicrobial resistance of *Staphylococcus* species isolated from dogs affected by pyoderma or otitis. Swabs from dogs clinically diagnosed with pyoderma and otitis were first seeded in Manitol Salt Agar. After a 24 h incubation at 37°C, characteristic colonies were gram stained and catalase tested. Species identification was conducted using MALDI-TOF MS (Biotyper). The susceptibility test was realized by disk diffusion according to CLSI standards, and 14 antimicrobials were tested. Sixty-eight swabs yielded *Staphylococcus* in pure culture. Thirty-one were *S. schleiferi*, 27 were from the *Staphylococcus Intermedius* group (SIG), four were *S. aureus*, three were *S. sciuri*, and three were other *Staphylococcus* spp. (*S. cohnii*; *S. saprophyticus* and *S. simulans*). In relation to resistance, Penicillin, Erythromycin and Clindamycin were the antimicrobials with the higher level of resistance, with 55.8 %, 33.8% and 32.3% of the samples resistant, respectively. The antimicrobials with low levels of resistance were Rifampicin, Doxycycline and Nitrofurantoin, with 0%, 1.47% and 1.47% of the samples resistant, respectively. The resistance to Meticillin was found in 19% (13/68) of the samples. Of those, 11 were from the SIG, representing probable samples of MRSP. Within the SIG group the percentage of resistance was 40.7% (11/27). The other two resistant samples were *S. sciuri*, a coagulase negative staphylococci. In conclusion, it was found resistant strains among dogs affected by pyoderma and otitis, in especial, resistance within the SIG group, which are probably MRSP. This is a matter of concern and represents a risk of zoonotic transmission.

Keywords: *Staphylococcus*, Antimicrobial Resistance, MRSP, Pyoderma.

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