

SURVEY OF METHICILLIN-RESISTANT COAGULASE POSITIVE *Staphylococcus* SPP. CARRIAGE IN HEALTHY DOGS AND DOGS WITH SKIN DISEASE

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Canine skin diseases (SD) are very common in the veterinary practice and are often complicated by recurrent bacterial infection. Affected dogs usually need multiple cycles of antibiotic treatments (AT) that can lead to development of multidrug resistant strains [1]. Coagulase-positive staphylococci (CPS) are the most often isolated pathogens from canine SD.

The aim of this study is to assess the prevalence of multidrug and methicillin resistant coagulase-positive staphylococci (MRScp) isolated from healthy dogs and dogs with SD, and to evaluate the correlation with clinical scores and previous AT. Forty-nine dogs were enrolled: 25 healthy and 24 with SD. Clinical history and previous AT were recorded. After a complete physical examination, clinical scores (CADESI-3 and pruritus) were calculated. Skin swabs from mouth, ear, genitalia, axilla and skin lesions, when present, were cultured in a nutrient and in a selective medium for MRScp. Suspected *Staphylococcus* colonies were identified by Maldi-Tof MS and specific PCR; methicillin resistance was confirmed by a PCR targeting *mecA* gene. Susceptibility tests and genetic typing, including *spa*-typing, SCCmec-typing and MLST were performed on isolates. Normal distribution of data was tested with Shapiro-Wilk test. Data were analyzed using ANOVA and z-test if normally distributed, otherwise with Mann-Whitney Test. Correlations between bacterial resistance and clinical scores or previous AT were assessed by Spearman test. P-value <0.05 was considered significant.

Ninety-five strains of CPS were isolated from 229 samples. A total of 13/95 strains were MRScp and were identified as *Staphylococcus pseudintermedius*. Among them, 10 were multidrug resistant and two were isolated from healthy dogs. The Sequence Type 71, *spa*-type t02 e SCCmec type II-III, which represents the main clonal strain in Europe [2], was the most frequently identified genetic type (11/13) also in this study. Staphylococci were more commonly isolated from axilla, genitalia and ear conduct of dogs with SD compared with healthy dogs ($p < 0.001$). Four out of the 6 MRScp positive dogs had received AT in the previous 6 months. No significant correlations between clinical scores or previous AT and methicillin resistance was found.

Although the low number of dogs included in the study could have affected the results of the investigated correlations, this study confirms the role of *Staphylococcus pseudintermedius* in canine pyoderma and shows that pet dogs may play a significant role as MRScp carriers. Furthermore, close attention should be also paid also to the control of healthy dogs.

[1] Magiorakos AP et al. Multidrug-resistant, extensively drug-resistant and pandrug-resistant bacteria: an international expert proposal for interim standard definitions for acquired resistance, *Clinical Microbiology and Infection*, 18:268–281, 2012. [2] Perreten V et al. Clonal spread of methicillin-resistant *Staphylococcus pseudintermedius* in Europe and North America: an international multicentre study, *Journal of Antimicrobial Chemotherapy*, 65: 1145 – 1154, 2010.