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ANTIMICROBIAL SUSCEPTIBILITY OF *Staphylococcus* spp. STRAINS ISOLATED FROM THE SKIN OF DOGS WITH SUPERFICIAL PYODERMA ASSOCIATED WITH CANINE ATOPIC DERMATITIS

Danilo A. C. Junior[1], Alexandre B. Cruz[1], José S. C. Júnior[2]

[1]University of Vale do Itajaí (UNIVALI), Brazil; [2]Dermatovet Veterinary Clinic, Brazil.
danilojunior@edu.univali.br

INTRODUÇÃO

Canine atopic dermatitis (CAD) is a common chronic inflammatory condition in small animal practice and is often associated with secondary bacterial pyoderma. Among the isolated microorganisms, the *Staphylococcus* genus stands out, including oxacillin-resistant strains (MRSA – methicillin-resistant *Staphylococcus aureus*) and multidrug-resistant strains (MDR – resistant to three or more antibiotic classes). The increasing antimicrobial resistance raises concerns about the indiscriminate use of antibiotics and the need for more targeted therapeutic approaches. This study aimed to characterize the susceptibility profile of bacterial strains isolated from dogs with CAD and associated pyoderma, focusing on the presence of MRSA and MDR resistance.

MATERIALS AND METHODS

Between January and July 2024, samples were collected from canine patients attended at General Clinics and specialized Veterinary Dermatology Services located in the northern region of the state of Santa Catarina, previously registered for this study.

Thirty-two bacterial strains were isolated from dogs with CAD and associated pyoderma. Samples were collected using sterile swabs, following standard dermatological technique. After collection, the material was stored in sterile tubes with Stuart transport medium and sent to the microbiology lab for bacterial culture and antimicrobial susceptibility testing (antibiogram).

Following phenotypic analysis, strains identified as belonging to the *Staphylococcus* genus were tested for susceptibility to six classes of antibiotics: oxacillin, sulftriaxone, norfloxacin, tetracycline, cefoxitin, and erythromycin. The disk-diffusion method on Mueller-Hinton agar (Kirby-Bauer) was used, and results were interpreted according to the guidelines of the Clinical and Laboratory Standards Institute (CLSI) and the European Committee on Antimicrobial Susceptibility Testing (EUCAST). Strains resistant to oxacillin were classified as MRSA, and those resistant to at least one antibiotic from three or more classes were classified as MDR.

RESULTS

Phenotypic analysis of the 32 isolated strains showed a predominance of Gram-positive bacteria, with 29 isolates (90.6%) identified as belonging to the *Staphylococcus* genus. The lowest resistance rates were found for cefoxitin (6.9%) and norfloxacin (13.8%), while the highest rates were observed for sulftriaxone (31%) and tetracycline (24.1%). Oxacillin resistance, a phenotypic marker for MRSA, was found in 5 samples (15.6%). Additionally, 5 strains (15.6%) were identified as MDR, with 3 (10.3%) simultaneously exhibiting both MRSA and MDR profiles. These variations may be associated with antimicrobial exposure patterns in the studied population, specific clinical management practices, or regional factors. Increased resistance to macrolides and tetracyclines is also commonly reported, partially supporting the findings described here.

CONCLUSIONS

The presence of MRSA and MDR strains in dogs with atopic dermatitis and associated pyoderma reinforces the importance of regular bacteriological analyses based on susceptibility testing. Such practices are crucial for guiding appropriate antimicrobial therapy, minimizing treatment failures, and limiting the spread of bacterial resistance in veterinary clinical practice.

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