

Identification, antibiotic susceptibility and multidrug resistance of bacterial agents from corneal ulcers in dogs from Berlin, Germany.



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Purpose

The aim of this study was to analyze the microorganisms present on corneal ulcers in dogs and its susceptibility to antimicrobial drugs.

Methods

This research encompasses retrospective analyses of cultures and antibiotic susceptibility tests conducted on 117 ulcers of 112 dogs treated at a specialized veterinary ophthalmology clinic in Berlin, Germany, from May 2021 to June 2024. Identification of samples was achieved using MALDI-TOF and the susceptibility testing by minimum inhibitory concentration (MIC).

Results

Brachycephalic breeds constituted 79.5% of the cohort, with a significant representation of French Bulldogs (50.9%). With 79,5% of positivity, a total of 108 microorganisms were isolated, being 107 bacteria and one fungus (Aspergillus fumigatus), with two or more agents growing in 17 cultures. The predominant isolate was Staphylococcus spp. (43.5%), mainly S. pseudintermedius (27,8%). Methicillin-resistant Staphylococcus pseudintermedius (MRS) was identified in 4% of the samples. Other isolates included β -hemolytic Streptococcus (19.4%), Enterobacteriaceae (15.7%), Pseudomonas spp. (8.3%), and 13,1% of other agents of lesser frequency. Susceptibility tests were conducted on 100 samples, excluding potential contaminants. Bacterial agents displayed high resistance patterns to penicillins, polymyxin B and fusidic acid, while demonstrating good susceptibility to fluoroquinolones, aminoglycosides, chloramphenicol and tetracycline. Furthermore, 27% of the microorganisms exhibited multidrug resistance (defined as resistant to at least one drug of three or more classes of antibiotics).

Conclusion

This study underscores the necessity of conducting cultures and antibiotic susceptibility tests in ulcerative keratitis. The increasing occurrence of multi resistant agents is a concern and reinforces the importance of rational antimicrobial therapy.















MR – Multiresistant, MDR – Multi-drugResistant; MRSP Staphylococcus pseudintermedius Meticillin Resistant; XDR – Extensively Multi-drug resistant; pXDR – possibly XDR

(Magiorakos et al., 2012)

