Identification and antimicrobial resistance of Staphylococcus spp. isolated from cats

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IDENTIFICATION AND ANTIMICROBIAL RESISTANCE OF *STAPHYLOCOCCUS* SPP. ISOLATED FROM CATS

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The misuse of antibiotics in companion animals has significantly contributed to the emergence of antimicrobial resistance (AMR). As their population grows, cats are increasingly recognized as potential reservoirs for AMR. The aim of this study was to identify *Staphylococcus* species isolated from feline clinical samples and determine their antimicrobial resistance patterns to antibiotics commonly used in small animal practice. Fifteen clinical samples were collected from cats with suspected bacterial infections from different body locations - wounds (6/15, 40%), eyes (6/15, 40%), skin (2/15, 13.3%), and urine (1/15, 6.7%). Samples were cultured on blood agar and incubated aerobically at 37°C for 24 hours. Following incubation, colonies suspected as staphylococci were identified by MALDI-TOF mass spectrometry. Three *Staphylococcus* species were identified: *Staphylococcus felis* (11/15, 73.3%), *Staphylococcus pseudintermedius* (3/15, 20%) and *Staphylococcus aureus* (1/15, 6.7%). Antimicrobial susceptibility testing was performed using Kirby-Bauer disk-diffusion test with a panel of 10 antibiotics representing eight different antibiotic classes. Additionally, oxacillin disks for *S. pseudintermedius* and cefoxitin disks for *S. felis* and *S. aureus* were used as CLSI screen test for methicillin resistance in staphylococci. Among all the isolates, 33.3% (5/15) showed resistance to at least one antibiotic. Antimicrobial resistance was observed to penicillin (3/15, 20%), tetracycline (2/15, 13.3%), erythromycin (3/15, 20%), enrofloxacin (3/15, 20%), gentamicin (1/15, 6.7%) and clindamycin (1/15, 6.7%). Importantly, only one isolate identified as *Staphylococcus aureus*, showed resistance to more than three classes of antibiotics, and was therefore classified as multi-drug resistant (MDR). Moreover, resistance to oxacillin/cefoxitin was detected in three out of 15 staphylococci (20%): one *S.felis*, one *S.pseudintermedius*, and one *S.aureus*. All of the isolates were susceptible to marbofloxacin, pradofloxacin, chloramphenicol and sulfamethoxazole-trimethoprim. Obtained results indicate that opportunistic infections in cats caused by *S.felis* are emerging and that methicillin resistance may also be present in coagulase-negative staphylococci. Further research is needed to determine the prevalence of AMR in staphylococci isolated from clinical samples of cats in the Republic of North Macedonia.