

Study on antimicrobial sensitivity of staphylococci isolated from the external ear canal of cats presented to the Veterinary Teaching Hospital, University of Peradeniya

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Introduction and Objectives: Bacterial otitis externa (OE) is the most common ear condition in cats. However, it is less frequently reported in cats than dogs. The most common bacterial organisms in the external ear canal of cats and their sensitivity patterns are less known. This project was designed to characterise the bacterial organisms in the external ear canal and the antibiotic sensitivity of *Staphylococcus* isolates to methicillin and five other antimicrobials (co-trimoxazole, tetracycline, ciprofloxacin, chloramphenicol, gentamicin) of cats who were brought to the Veterinary Teaching Hospital (VTH), University of Peradeniya between May to July 2024

Methods: Both external ear canals of 120 cats were sampled. The ear swabs were cultured on blood agar aerobically and bacterial isolates were identified using routine biochemical methods. Antibiotic sensitivity was determined using the disc diffusion method. Chi-square test with Marascuilo procedure for comparing multiple proportions was used for data analysis.

Results: Most of the cats were crossbred (n=108), while the rest were Persian (n=12). The age range was 2 months to 13 years. There were 64 males and 56 females. Forty-six of them were healthy, 28 had OE and 46 presented with infections/conditions other than OE. A total of 145 bacterial isolates were obtained, representing 30%, 34.5% and 35.5% of the respective groups. Most isolates (n=135, 93%) were staphylococci, representing 39, 51 and 49 isolates from the respective groups. *Staphylococcus epidermidis* predominated in all groups (53%, 74% and 68% of the *Staphylococcus* isolates respectively) followed by *S. aureus* and uncharacterised coagulase negative staphylococci. Of the 135 *Staphylococcus* isolates, 34 (25.1 %) were resistant to methicillin. Of these 34 isolates, 10 were multidrug resistant (MDR). The number of bacterial isolates and *Staphylococcus* spp. isolates obtained from cats with OE were significantly higher (p=0.034) than healthy cats or cats with infections/conditions other than OE. No significant differences were observed regarding the methicillin resistance or MDR status between the 3 groups.

Conclusions: Staphylococci predominated the culturable aerobic bacterial flora in external ear canals of the cats tested in this study with *S. epidermidis* being the most common. Bacterial isolation rates and *Staphylococcus* spp. isolations from cats with OE were significantly higher than in the other two groups. Approximately 25% of staphylococci were methicillin resistant with a low incidence of MDR.

Keywords: Otitis externa, cats, *Staphylococcus*, *S. epidermidis*, methicillin resistance, MDR

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