TITLE: MULTIRESISTANT *Pseudomonas aeruginosa* ISOLATED FROM OTITIS IN COMPANION ANIMALS AT VETERINARY HOSPITAL - UFRRJ

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ABSTRACT:

Otitis is a chronic inflammation of external ear canal, and affect dogs and cats of any age and breed, but long-eared dogs, such as spaniels and retrievers, and dogs with hairy external canals, such poodles, are more susceptible. Morphological abnormalities in the ear canal, bacteria, fungi and ectoparasites can be the cause of otitis. Infectious otitis caused by *Pseudomonas aeruginosa* is more common in tropical climates, and because of the characteristics of the infectious agent, treatment is difficult. *Pseudomonas aeruginosa* is a nonfermentative gram-negative bacilli, opportunistic pathogen of animals and humans, typically found in water, soil and plants, and being also often involved in nosocomial infections. These bacteria are resistant to many antimicrobials and disinfectants and cause infection in immunocompromised hosts. The basis for the high resistance of these organisms is the lower outer-membrane permeability, coupled with secondary resistance mechanisms such as an inducible cephalosporinase or antibiotic efflux pumps. This study aimed to evaluate the frequency of multiresistance in *P. aeruginosa* isolates, from otitis cases, in companion animals at veterinary hospital - UFRRJ. A total of 18 isolates were submitted to the phenotypic resistance test with the following antimicrobials: neomycin, enrofloxacin, polymyxin and imipenem. The results of the antimicrobial susceptibility test revealed that 94.4% (17/18) of the strains were resistant to two or more antimicrobials, and 22.2% (4/18) were resistant to three or more antimicrobials. The most prevalent antimicrobial resistance were neomycin and enrofloxacin, with 88.8% (16/18) and 88.3% (15/18), following by polimyxin 33.3% (6/18) and imipenem 22.2% (4/18) respectively. Topical antimicrobials as polymicin, aminoglycosides and fluoroquinolones are the most used in otitis therapy, however, high level of resistance have been observed. The use of imipenem, a representative of carbapenem group, as a systemic therapy is an alternative in chronic cases non-responsive to other antimicrobial groups. The conscious use of antimicrobials is a continuous challenge for a better response in treatments, and to avoid the increase of multiresistant microorganism.

Keywords: antimicrobials resistance, dogs, cats, otitis.