

TITLE: EPIDEMIOLOGIC SURVEY OF BACTERIA ISOLATED IN COMPANION ANIMALS IN JOINVILLE, BRAZIL

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ABSTRACT:

The indiscriminate antibiotics administration for the treatment of infections in animals has been described as an important contributing factor for the wide spread of bacterial multiresistance in ecosystems. In addition, resistant bacteria are continuously discarded in the environment as result of medical, veterinary and agrarian activities. Our aims were to carry out an epidemiological survey of the main bacteria isolated in clinical samples from companion animals routinely investigated for etiology definition and to evaluate their phenotypic profiles of resistance to usual antibiotics. The data was retrieved from reports stored at Medivet Diagnostics, the main clinical laboratory dedicated to veterinary medicine located in Joinville, southern Brazil. Gender and race of animals, as well as microbiological results and anatomical site of sampling, were collected retrospectively covering three consecutive years beginning in January 2014. Data were compiled using software Excel and the analysis was done descriptively. A total of 844 cases were identified, of which 787 (93.3%) belonged to canine breeds and 57 (6.7%) to felines. Not Defined Race (NDR) was the most representative (17.4%) among dogs, followed by Poodle (9.4%) and Shih Tzu (8.7%). NDR also prevailed (42.1%) among cats. The most frequent types of clinical samples were urine (37.8%) and otological secretion (25.1%). *Staphylococcus* (92.3%) was the most prevalent genus among Gram positive bacteria (n=400), while *Escherichia* (42%) and *Pseudomonas* (30.2%) were the most represented among Gram negatives (n=444). There were no significant discrepancies in the distribution of bacterial species between dogs and cats, nor in males and females. The antibiotics showing the highest rates of resistance were clindamycin (54.3%), amoxicillin (52.6%) and cephalexin (52.5%). It is noteworthy that 7.9% of isolates showed resistance to polymyxin B, being this phenotype more frequently observed in *Staphylococcus* spp. (18/26) and *Escherichia coli* (17/26). Due to its nephrotoxicity, polymyxin B is usually employed as the last resource for treatment of infections caused by multiresistant Gram negative pathogens; therefore, the high level of resistance observed among companion animals impose a new concern. Further studies related to microbial resistance in companion animals are needed, since the empirical or inappropriate use of antibiotics may have serious long-term consequences.

Keywords: companion animals, antimicrobial agents, antibiotic resistance

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