TITLE: A PROFILE OF AN ANIMAL BACTERIAL DISEASE DIAGNOSTIC LABORATORY: ANIMAL SPECIES, ISOLATED BACTERIA AND SUSCEPTIBILITY TO ANTIMICROBIAL DRUGS

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ABSTRACT:

Bacterial disease diagnostic laboratories have the important function of confirming a suspected disease, establishing a prognosis and helping to identify different treatment options. Among these, the importance of choosing the adequate antimicrobial drug deserves highlighting, since it is essential for the efficacy in preventing selection for resistant bacteria. The objective of this study is to report the profile of an animal bacterial disease diagnostic laboratory in the Federal District of Brazil. The samples were received from private clinics, veterinary hospitals, rural producers and private veterinarians. The main species analyzed were: birds, cattle, buffalo, goats, horses, sheep, pigs, cats, and dogs, the latter being the most prevalent. A total of 1.023 bacteria were isolated, 74.6% of those being from dog samples. Among the isolated bacteria, 57.7% were Gram-positive and 42.7% were Gram-negative. The most frequently Gram-positive genera isolated were *Staphylococcus* spp. (62.8%), *Streptococcus* spp. (12.9%) and *Corynebacterium* spp. (5.4%); the most prevalent species was *Staphylococcus intermedius*. The majority of Gram-negative bacteria belonged to the genera *Escherichia* spp. (24.2%), *Pseudomonas* spp. (11.5%) and *Proteus* spp. (7.5%), the most prevalent species being *Escherichia coli*. Different drugs were tested using the disk diffusion method coupled with the log-linear statistical model. This study showed a clear difference between Gram-positive (more sensitive) and Gram-negative (less sensitive) bacteria in relation to the antimicrobial drugs. Both groups showed a higher frequency of gentamycin sensitive bacteria. Among the Gram-positive bacteria, higher sensitivity was detected to amoxicillin + clavulanic acid, amikacin, cefadroxil, cefazolin, cephalexin, cephalotin, chloramphenicol, doxycyclin, neomycin and nitrofurantoin ($p<0.05$). Gram-negative bacteria showed more sensitivity to amoxicillin, chloramphenicol and neomycin ($p<0.05$). Among the most frequently isolated bacterial species, the drugs with higher *in vitro* efficacy against *Staphylococcus intermedius* were amikacin and cefadroxil; in the case of *Escherichia coli*, higher efficacy was obtained using gentamicin and amoxicillin + clavulanic acid. The majority of antimicrobial treatments are done without the support of culture and antibiogram. This abstract report the routinely isolated bacteria and their susceptibility to drugs used in veterinary practice.

Keywords: antibiotics, infection, resistance

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