BACTERIAL INFECTION OF THE UPPER RESPIRATORY TRACT IN SELECTED BREEDS OF DOG IN ABEOKUTA, NIGERIA.

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ABSTRACT

Dogs are domestic animals as well as pets with potential zoonotic respiratory infections. This study aimed at profiling bacterial species associated with upper respiratory tract infection (URTI) in selected breeds of dog in Abeokuta, a city on coordinates 7º9'39''N and 3º20'54''E. Nasopharyngeal samples were aseptically collected from a total of fifty-five (55) dogs at the Veterinary Teaching Hospital (VTH), Federal University of Agriculture, Abeokuta (FUTA), Nigeria. Ten (10) breeds of exotic dogs were examined for probable bacteria responsible for URTI. Total bacteria count (cfu), percentage occurrence and resistance screening against selected antibiotics were enumerated. The isolates per breed in a group with age as a factor, were screened according to standard microbiological methods while antibiotics susceptibility test (AST) was performed by Kirby-Bauer's disc diffusion technique with their minimum inhibitory concentrations (MICs). URTI was highest (49.0%) for dogs below 12 months while the least percentage of 5.5% was recorded for dogs between ages 6 and 10 years. The decreasing order of URTI rate based on breed was; Alsatian (43.6%)>Boerboel (20.0%)>Italian mastiff>Terrier cross

(1.8%). The frequency of occurrence of ten identified bacterial species were; *Escherichia coli* (83.1%), *Citrobacter freundii* (73.4%), *Staphylococcus aureus* (67.5%), *Klebsiella oxytoca* (65.2%), *Bacillus subtilis* (57.6%), *Staphylococcus saprophyticus* (40%), *Pseudomonas aeruginosa* (38.2%), *Streptococcus sp.* (18.2%), *Proteus mirabilis* (14.5%) and *Haemophilus sp*. (5.8%). All the isolates expressed significant differences ($P<0.05$) across all the parameters tested and were also 100% resistant to at least one of the antibiotics tested. Percentage susceptibility rate (%) to Nitrofurantoin (100), Ciprofloxacin and Amoxycillin (90.0), Ceftriaxone (10.0) while Augmentin was completely resisted by all the isolates (0.0). The study concluded that most pet-dogs in the study locality were potential carriers of antibiotic-resistant bacterial strains responsible for recurring URTI. Hence, need for more public awareness aimed at curtailing the spread of resistant microbial agents of URTI.

BIOGRAPHY

Olusoji Adeyosoye is an early career academic in Environmental Microbiology with core interest in the innovative application of autochthonous rumen (cow) bacteria for industrial application, aimed at maintaining greenness of nature and safer environment. He has a background experience in science laboratory technology within the university system for two decades before taking full academic position at the Obafemi Awolowo University. Olusoji is vast in analytical laboratory skills in various procedures/protocols, such expertise include; semen evaluation, microbiological assessment of given specimen(s), water and sewage analyses/treatment, anaerobic conversion of bio-degradable wastes to biogas and stabilized organic manure, biochemical assay of blood sera, rumen microbial kinetics, in vitro feed digestibility techniques, proximate analysis, determination of chemical and phytochemical components of biological substances, microbial enzyme production, antibiotic-resistant genes profiling of bacteria associated with animal manure, improvisational adaptability of laboratory procedures, Olusoji was a visiting Scholar to Iowa State University, Ames, USA in 2010, visiting scientist to University of Tennessee, Knoxville, USA and Iowa State University, Ames, USA in 2015 and 2023 respectively. He has a number of publications in reputable Journals and Proceeding to his credit. He is open to productive collaborations and possible Grant Awards as a current doctoral researcher.