IDENTIFICATION AND CHARACTERIZATION OF BACTERIA INVOLVED IN DISTURBANCES OF LOWER GASTROINTESTINAL TRACT (COLITIS) OF DOMESTIC DOGS IN THE RIO DE JANEIRO STATE

Suzana M. G. Leite[1], Renata F. Ferreira[2], Gabriel Taddeucci [4] , Renata Cristina Picão[4], Bruno Penna[3], Regina Maria Cavalcanti P. Domingues[1], Eliane de Oliveira Ferreira[1*]

[1] Laboratório de Biologia de Anaeróbios, Depto. Microbiologia Médica, IMPG, UFRJ; [2] Laboratório de Microbiologia e Parasitologia Veterinária, Universidade de Vassouras, Vassouras, RJ; [3] Laboratório de Cocos Gram-positivos, Depto de Microbiologia e Parasitologia, Instituto Biomédico, UFF; [4] Laboratório de Investigação em Microbiologia Médica, Depto. Microbiologia Médica, IMPG, UFRJ.

Colonic disease in dogs is a relatively a common clinical complaint, usually classified as either inflammatory or neoplastic. The correlation between etiology and clinicopathological findings in canine colitis are poorly elucidated and in most cases, treatment of clinical colitis remains empirical. Thus, the present study aims to characterize pathogenic bacteria and the clinical-pathological findings associated with disorders of the lower gastrointestinal tract in dogs. Disorders could include the presence of mucus, blood and/or abnormal consistency. Histopathological characterization, patient´s hematological and biochemical profiles along with images acquired during the colonoscopy procedure were performed to evaluate the correct underlying etiology and consequent disease management. A complete clinical-epidemiological survey form was collected from all patients, as well. Samples of fecal contents or biopsy fragments by colonoscopy were inoculated in aero and anaerobiosis conditions in a differential media. Bacteria isolated were identified by MALDI-TOF MS (BRUKER®). Since most of the isolated bacteria were from the family enterobacteriaceae, such as *Escherichia coli*, *Klebsiella pneumoniae* and *Proteus mirabilis*, samples were confirmed by a PCR multiplex targeting genes for *blaSHV, blaTEM, blaGES* and *blaCTX*. Phenotypic detection of ESBL and AmpC production was also performed. Most animals presented chronic and recurrent cases, however not necessarily with diarrhea. In the macroscopic analysis, the colon was mostly hyperemic, with evident vascularity, irregular texture, and friable appearance. In the morphological evaluation, the colonic fragments presented discrete to moderate inflammatory characteristics, all with lymphocytic-plasmacytic pattern. The hematological and biochemical profiles varied significantly according to the clinic of each dog. So far, 21 samples were analyzed with three positives for ESBL production, two for CTX-M-1/2 (*E. coli*) and one for TEM (*E. coli*). Intestinal infections represent an important public health issue worldwide, for humans and animals, and a zoonotic potential for most of the pathogens responsible for this infection has been raised. The one health concept is a global approach to understand human, animal and environmental health and the risks, to protect them all. We believe that our study will contribute to understanding colitis in dogs and their roles as a host for transmission to other animals and humans.

Keywords: *Enteropathogenic bacteria*, domestic dogs, lymphocytic-plasmocytic colitis, intestinal disorders, ESBL.