Campylobacter upsaliensis isolated from young dogs with and without diarrhea

Campylobacter upsaliensis isolado de cães jovens com e sem diarreia

Dear Editor,

Campylobacter upsaliensis is considered a human enteropathogen associated with diarrhea and bacteremia. This is an atypical species of Campylobacter genus as it is thermophilic, weakly catalase-positive, and generally sensitive to cephalosporins. Immunosuppressive factors seem to be of major importance in triggering the disease. Cats and dogs are considered the major carriers for humans, more frequently in under 12-month-old dogs. In Brazil, studies on dogs as potential C. upsaliensis carriers for humans are scarce. We studied the isolation frequency in 100 dogs with diarrhea and 100 dogs without diarrhea; all animals were less than 12 months old.

Dog feces were submitted to two parallel procedures: 1) filtration technique - one gram of feces was suspended in a test tube with 9ml saline solution, vigorously homogenized for 1 min, centrifuged at 2,500 rpm for 5 min, and filtered using 0.65mM cellulose acetate membrane filter. Three drops from this filtrate were grown on Petri dishes in sodium thioglycolate agar supplemented with 20% bovine blood and incubated at 37°C. 2) Direct growth – one aliquot of feces was grown in smears in the same agar with Butzler selective supplementation (bacitracin, novobiocin, cycloheximide, colistin and cefazoline) and incubated at 43°C. In both procedures, the plates were examined with a phase-contrast microscope (1000 X) for morphological evaluation of vibron characteristics and typical spirillum movement. After presumptive diagnosis, these colonies were replicated in Tarozzi medium and incubated at 37°C for 72 hours to obtain the inoculum, with density adjusted to 1 MacFarland standard turbidity (3x10^8 CFU/mL). Definitive diagnosis was made using biochemical characteristics from following tests: catalase (-) and hippuricase production (-); growth at 43°C (+), 25°C (-), in 1% glycine (-), and in 3.5% NaCl (-); resistance to nalidixic acid (-) and cephalothin (-); production of H₂S with (-) or without cysteine (-); and tolerance to 2.35 triphenyltetrazoline chloride (-). The animals with diarrhea showed 3 (3%) C. upsaliensis strains and the diarrhea-free 2 (2%). Our results were relatively lower than other data in literature, suggesting heterogeneity of this bacterium isolation frequency. To increase the possibility of C. upsaliensis detection, a filtration technique should be used on a routine basis; as has already been reported. C. upsaliensis isolation from dogs highlights the risk of zoonosis, especially in Brazil, although no reports were found in literature.

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