Efficacy of Saccharomyces boulardii in the treatment of dogs with chronic enteropathies. Double blind placebo control study

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Background:
Saccharomyces boulardii (Sb) is a non-pathogenic yeast used in the prevention and treatment of acute and chronic gastrointestinal disorders in human beings. In veterinary medicine is mainly used in zootechnical field and horses, but there are no information regard its use in dogs or cats.

Aim:
The aim of this study was to evaluate the effect of Sb in healthy dogs (HD) and dogs with chronic enteropathies (CE). In HD was evaluated the viability of Sb and the presence of side effect, in dogs with CE a double blind placebo control study was performed adding Sb or placebo to standard protocol (diet, antibiotics, immunosuppressive drugs).

Material and methods:
Sb was formulated in 10x10^9 CFU capsules. Its concentration and viability within the capsules was controlled by yeast culture in subsequent steps until expiration date. Client owned dogs only were included, healthy dogs were included if they have normal physical exams and absence of gastrointestinal signs in last month, dogs with CE were included with the diagnosis of inflammatory bowel disease (IBD) with or without concomitant protein loosing enteropathy (PLE). In HD Sb was administered for 10 days (1x10^9 CFU/kg BID); daily clinical evaluation was performed to assess possible adverse effects and quantitative stool cultures for yeasts were performed before, during and after the administration. In dogs with CE a randomized double blind placebo-control study was performed, administering Sb (1x10^9 CFU/kg BID) or placebo (Pl). Sb or Pl administration was added to standard therapeutic protocols (diet, antibiotics and immunosuppressive drugs), to evaluate its efficacy for the treatment of IBD and PLE. Complete blood work, abdominal ultrasonography, gastro-duodenal and colon endoscopy and histopathological evaluation of intestinal samples were performed at diagnosis and after 60 days of treatment. Validated score system for the clinical signs (CIBDAI), ultrasonography, endoscopy and histopathology were applied. Significance was set for P<0.05.

Material and methods:

Results:
Four HD were included. Results in HD showed the absence of Sb in the faeces before treatment, its steady state (10x10^9 CFU/g) after 5 days and its complete elimination 4 days after withdrawal of treatment. No adverse effects were reported.

Eighteen dogs with CE were included (10 with IBD, 8 with PLE; 10 received placebo, 8 received Sb), 2 female and 16 male, median age 3.8 years, median body weight 27kg, median BCS 3point. Predominant breed were GSD (24%) and Rottweiler (12%). Four dogs died (2 in Sb group, 2 in control), one dog was lost.

In CE dogs the clinical score improved significantly in dogs receiving Sb compared to dogs receiving Pl (P=0.009). The daily frequency of defecation in the Sb group was significantly lower with respect to Pl after 45 (P=0.032) and 60 (P=0.004) days of treatment. In PLE dogs the albumin concentration increased significantly (P=0.034) in the group receiving Sb with respect to PI.

No statistical differences were found between dogs receiving Sb and Pl and neither before and after treatment, based on the endoscopic evaluation of duodenum and colon, and duodenal ultrasonographic and histological evaluation.

Conclusion and clinical importance:
In conclusion, Sb can be safely used in dogs with CE, in addition to standard treatment, to achieve a better control of clinical signs and a significant increase in albumin concentration compared to the standard therapy alone.