

capsules

THE CURRENT LITERATURE IN BRIEF

Bacterial Overgrowth: More Than Mere Numbers

Derangements in intestinal microflora are believed to play a crucial role in inflammatory bowel disease and small intestinal bacterial overgrowth in humans. A similar pathogenesis has been suggested for canine counterparts of these diseases, but the exact mechanisms remain poorly characterized. The use of duodenal fluid bacterial culture and indirect biochemical markers for diagnosing small intestinal bacterial overgrowth (SIBO) were investigated in 30 dogs with a variety of gastrointestinal diseases. Because 9 of the dogs also had antibiotic-responsive diarrhea (ARD), SIBO and ARD were defined using nonoverlapping criteria for the purpose of comparing and contrasting these conditions. Dogs classified as having SIBO (> 105 colonyforming units [CFUs] of bacteria/ml duodenal fluid) had bacterial numbers that did not significantly differentiate dogs with ARD from dogs with other disorders or controls. Indirect tests also did not differentiate, and no significant differences were noted before and during antibiotic therapy. Although a small group was used in this study, results question the utility of quantitative duodenal fluid bacteriology and indirect biochemical markers for SIBO in the investigation of canine gastrointestinal disorders.

COMMENTARY: The definition of canine SIBO is not clear. This study adds more information to this controversial disease complex. Historically, SIBO has been defined clinically as a quantitative duodenal bacterial culture over a specific amount, usually > 105 CFUs/ml. Several studies have shown inconsistencies in methods, sampling technique, sample delays in culturing, isolated pockets of bacteria, inadequate anaerobic isolation techniques, and normal dogs having bacteria in excess of the limit. All of these factors make quantitative cultures difficult to interpret. Cultures are also difficult for practitioners to perform accurately. This study and others have shown that serum folate and cobalamin for diagnosing SIBO failed to correlate with bacterial counts. Increased serum total unconjugated bile acid concentrations were seen in only 5 of 30 clinical cases and did not differentiate dogs with ARD from those with other disorders. SIBO and ARD are complex, probably involving intraluminal bacterial metabolism and mucosal injury and not bacterial numbers alone. The authors acknowledge that the number of cases is small and results should be viewed as preliminary. —
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Comparison of direct and indirect tests for small intestinal bacterial overgrowth and antibiotic-responsive diarrhea in dogs. German AJ, Day MJ, Ruaux CG, et al. J VET INTERN MED 17:33-43, 2003.