

## Fat Soluble Vitamin, B12 and Iron Deficiency in Patients with Coliform Small Intestinal Bacterial Overgrowth (SIBO)

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**Background and Hypothesis:** Vitamin deficiency has been described as a clinical complication of SIBO. However, it is unclear if the type of bacterial colonization is an important determinant in vitamin and nutritional complications. Our aim was to characterize the prevalence of specific vitamin and mineral deficiencies (vitamins A, D, E, K, B12, and iron) in patients with and without coliform SIBO. We hypothesized that results would show a significant increase in the incidence of vitamin and/or mineral deficiency in patients with coliform SIBO.

**Methods:** A prospective registry was formulated, consisting of patients presenting to our outpatient motility clinic with suspected SIBO. Serum levels of vitamins A, D, E, INR for K, B12 and iron studies were obtained. Upper enteroscopy-aspiration and quantitative aerobic-anaerobic cultures were performed. Primary study endpoints were prevalences of clinical vitamin/mineral deficiencies (A, D, E, K, B12, and iron) based on the final diagnosis: A) SIBO by coliform bacteria ( $>10^4$  CFU/mL), B) SIBO by upper respiratory tract (URT) bacteria ( $>10^5$  CFU/mL) and no SIBO. 2x3 chi square, univariate and multivariate analyses were utilized.

**Expected Results:** 128 subjects were enrolled, and 96 subjects underwent aspiration. Final diagnoses were the following: coliform SIBO in 32 (33%) and no SIBO or URT SIBO in 64 (67%). The presence of any vitamin deficiency appears to be more prevalent in patients with coliform SIBO (46.7%) than those without (28.1%), but it is currently unclear if these differences reach statistical significance.

**Conclusions:** 1) Fat-soluble vitamin deficiency may be more common in coliform SIBO, but its absence does not exclude the possibility of coliform SIBO being present. 2) Although a high folate and low B12 can be suggestive of SIBO, these derangements were not common in our heterogeneous group of patients.

\*Will send update following data analysis\*