

Simenhoff, M.L., Dunn, S.R., Zollner, G.P., Fitzpatrick, M.D., Emery, S.M., Sandine, W.E., & Ayres, J.W., (1996). Biomodulation of the Toxic and Nutritional Effects of Small Bowel Bacterial Overgrowth in End-Stage Kidney Disease Using Freeze-Dried *Lactobacillus acidophilus*. Mineral and Electrolyte Metabolism, 22, 92-96.

Abstract

Small bowel bacterial overgrowth (SBBO), well known to occur in end-stage kidney failure, is responsible for producing uremic toxins and contributing to the patient's decreased nutritional well-being. In this study, 8 hemodialysis patients were treated with a course of oral *Lactobacillus acidophilus* (LBA) in an attempt to alter this SBBO. LBA treatment was effective in lowering 2 compounds generated in vivo. Serum dimethylamine (DMA) levels dropped from 224±47 to 154±47 µg/dl at the end of LBA treatment (p<0.001). Nitrosodimethylamine, a carcinogen, levels also decreased significantly from 178±67 (untreated) to 83±49 ng/kg (after LBA treatment). Patients nutritional status, assessed as serum albumin, body weight, caloric intake, midarm muscle area (MAMA) and appetite improved modestly, but not significantly. LBA changed small bowel pathobiology by modifying metabolic actions of SBBO, reducing in vivo generation of toxins and carcinogens and promoting nutrition with no adverse side effects.