

Abstract

Proceedings from North Texas Chapter of the American College of Surgeons; 2008 Feb

Preoperative Micronutrient Deficiency in Morbidly Obese Patients

Kuhn JA, Leidner R, Arnold DA, Fisher TL, McCarty TM

BACKGROUND: Preoperative nutritional status in morbidly obese patients is poorly understood. Baseline deficiencies of thiamine and Vitamin D have been reported. The current study was designed to analyze a broad range of intracellular vitamins and minerals in morbidly obese patients prior to weight loss surgery.

METHODS: One hundred consecutive patients from a prospective IRB-approved registry underwent preoperative testing prior to a Roux-en-Y gastric bypass. Serologic measurements of B-12, iron, and folate were recorded. In addition a broad spectrum of vitamin, mineral, and other micronutrients were assayed using a functional analysis based on lymphocyte growth and DNA synthesis with in-vitro manipulation of individual nutrients in media (Spectracell, Inc.). Predictors of specific deficiencies were analyzed.

RESULTS: The patient characteristics included twenty-two men and seventy-eight women, with an average age of 39.7 and an average BMI of 46.0. There were a total of 25 patients with diabetes and 75 patients without diabetes. Intracellular functional deficiencies included B-12 (34%), zinc (32%), Calcium (29%), vitamin D (24%), and folate (24%). Serological deficiencies were found in B-12 (6%) and iron (5%). There were no significant predictors for deficiencies based on gender, diabetes, age < 50, BMI > 50, or race.

CONCLUSION: Micronutrient deficiency in morbidly obese patients is common preoperatively when compared to normal patients. Serologic levels of B-12 and folate may underestimate the degree of intracellular deficiency when compared to an intracellular lymphocyte assay with in-vitro nutrient manipulation. Preoperative micronutrient supplementation may be beneficial in morbidly obese patients undergoing weight loss surgery.

