

Weight Gain After Acid Control in Zollinger Ellison Syndrome

Brian Riff MD¹; David A. Leiman MD¹; Douglas L. Fraker MD²;
Bonita Bennet RN¹; David C. Metz MD¹

¹Division of Gastroenterology, Hospital of the University of Pennsylvania, Perelman School of Medicine at the University of Pennsylvania, Philadelphia, PA

²Department of Surgery, Hospital of the University of Pennsylvania, Perelman School of Medicine at the University of Pennsylvania, Philadelphia, PA

Background: Zollinger Ellison Syndrome (ZES) is a disorder characterized by a gastroenteropancreatic neuroendocrine tumor, hypergastrinemia and gastric acid hypersecretion. Gastric acid hypersecretion produces ulcer disease, diarrhea and weight loss. No prior studies examined weight change after acid control.

Methods: We performed a retrospective cohort study of patients with ZES (n = 60) to examine changes in weight following medical or surgical control of acid hypersecretion. Appropriate dose PPI therapy was defined as a basal acid output (BAO) < 10 mEq/hr in patients with intact stomachs (< 5mEq/hr after acid-reducing surgery) or an absence of hypersecretory symptoms on at least twice daily full dose PPI. Weight changes expressed as change in percent change from baselines were examined at nadir weight, 6, 12, 18 and 24 months using single sample t-tests.

Results: Of the 60 patients, the primary cohort consisted of 47 patients that had a nadir weight recorded. The cohort consisted of 20 males; mean age = 57.9 + 14.4 yrs; mean weight 165 + 49.3 lbs; 14 (30%) with MEN1. Patient weights were significantly increased as a percent change above baselines following appropriate dose PPI therapy at 6 mo (6.4%), 12mo (6.9%), 18mo (11.9%) and 24mo (10.5%) (p < 0.005). This weight gain remained significant even in MEN-1 patients (p = 0.012). Surgical resection was performed on 17 patients (36.2%) with curative intent and 5 (29%) were considered biochemically cured. Significant weight gain was seen following surgical at 12mo (8%) and 18mo (7%) but that weight gain was lost at 24mo (0.8%, p = 0.78).

Conclusion: Our finding that effective acid control leads to weight gain in ZES patients is novel. Weight gain was most pronounced in surgically cured patients with sporadic disease. These results suggest that trending weight can be used as a surrogate for acid control in the appropriate patient population.