

Serum Gastric Biomarker Levels After Sleeve Gastrectomy and Roux-en-Y Gastric Bypass Operations: A Prospective Study with 1-year Follow-up

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Abstract

Objectives: To study the function of the gastric mucosa and acid secretion after bariatric surgery, GastroPanel® (GP), serum biomarker test was performed in 29 laparoscopic sleeve gastrectomy (LSG) and 28 laparoscopic Roux-en-Y gastric bypass (LRYGB) patients before and after surgery.

Methods: Pepsinogen I (PGI), II (PGII), basal fasting gastrin-17 (G17b), stimulated gastrin-17 (G17s) and *Helicobacter pylori* antibody (HPAB) levels in serum were assayed preoperatively, postoperatively on days 1 and 3, and after 1, 3 and 12 months.

Results: The serum levels of PGI, PGII and the PGI/PGII ratio declined significantly in the LSG patients immediately after surgery, and the low levels remained stable throughout the 1-year follow-up period. This was accompanied by a substantially increased output of G17b. In the LRYGB patients, PGI and PGII levels rose markedly during the first 3 postoperative days, thereafter the levels of PGI and PGII, and the PGI/PGII ratio declined significantly. In contrast to LSG, the level of the G17b remained unchanged throughout the whole follow-up period in the LRYGB patients. Excess Weight Loss (%EWL) was 77% and 65% in the LSG and LRYGB groups, respectively. The preoperative biomarker profile did not correlate with %EWL in either of the operative groups.

Conclusions: Significant changes do occur in GP biomarker levels following LSG and LRYGB, suggesting reduced functional activity of the gastric corpus with consequent hypoacidity in the gastric remnant, particularly after LSG. Preoperative GP biomarker levels do not predict postoperative %EWL.

Key words: Morbid obesity, bariatric surgery, gastroscopy, serological biomarkers, test accuracy, GastroPanel.