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The influence of Sleeve Gastrectomy on the levels of Gut Peptides in obese diabetic and obese non-diabetic patients

Objective: Our primary goal in conducting this prospective study was to investigate and analyze the influence of sleeve gastrectomy on the blood levels of gut peptides; ghrelin, peptide YY (PYY), Glucagon-like Peptide-1 (GLP-1), and leptin in Type-2 diabetic and non-diabetic morbidly obese (MO) patients. And, also, to examine changes in tissue levels of these gastrointestinal hormones in diabetic and non-diabetic individuals at the time of Laparoscopic sleeve gastrectomy (LSG).

Background: there is ample evidence suggesting that weight loss and the improved glucose metabolism observed following LSG are not only due to caloric restriction, but neurohormonal changes may be involved.

Methods: Fasting blood levels of the above peptides and metabolic indices of glucose metabolism were evaluated in 30 consecutive morbidly obese non-diabetic and 29 morbidly obese diabetic subjects before and six months after LSG. The tissue levels of the peptides were determined only before surgery for both groups.

Results: The BMI values decreased noticeably at six months, postoperatively. An improvement in the overall glycemic profile of the morbidly Obese (MO) patients was observed. The fasting blood levels of ghrelin and leptin were decreased, following LSG. On the other hand, however, the blood levels of PYY and GLP-1 were significantly increased, postoperatively.

Conclusions: LSG improves glucose homeostasis, significantly. It, also, produced significant changes in the blood levels of ghrelin, PYY, GLP-1 and leptin in both the MO diabetic or the MO non-diabetic paints. The tissue levels of the peptides, at time of surgery, were also noticeably affected. These hormonal changes may have multiple beneficial effects on the mechanisms underlying weight loss and the control of diabetes.

Biography

Ali A Mustafa is a Professor of Clinical Pharmacology & Therapeutics in the College of medicine at king Fahad Medical City -2007-2019 and done his Doctoral student in Neuropharmacology at the University of Southampton, England and M.Sc Postgraduate at Southampton University studying Biochemical Pharmacology and B. Pharm from University of Khartoum

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