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Early Improvement in Glycemic Metabolism after Laparoscopic Sleeve Gastrectomy in Obese Patients – A Prospective Study

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Abstract
Background: according to W.H.O. in 2014 more than 600 million adults were obese, (more than doubled since 1980), and face a major risk for the onset of metabolic syndrome, including T2DM. Due to the poor control of glycemic imbalance for the conservative treatment of T2DM, the metabolic surgery was able to gain an important role in modern management of T2DM, with significant reported improvements or remissions for these patients.
Objective: to study the effects of laparoscopic sleeve gastrectomy (LSG) on glycemic metabolism in obese patients, with or without T2DM.
Methods: 60 consecutive patients were included in a prospective study and were submitted to laparoscopic sleeve gastrectomy in Ponderas Hospital between February – March 2013. BMI, waist circumference and glycemic parameters were studied at the moment of entering the study, 10 days after surgery and at 6 months follow up.
Results: the glycemic control was significantly improved starting with postoperative day 10. Statistically significant improvements were noticed after six months postoperatively in BMI values ($p<0,0001$), waist circumference ($p<0,0001$), glycemic levels ($p<0,0001$), insulin ($p<0,0001$), C-peptide ($p<0,0001$) and HOMA.
Conclusions: a rapid induced improvement of glucose metabolism in both diabetic and non-diabetic patients occurs before a significant weight loss (POD 10). At 6 months, when associated with an important weight loss, both diabetic and non-diabetic patients present a furthermore improvement in glycemic metabolism, that enables us to consider that sleeve gastrectomy is an efficient method for a sustained improvement in the metabolic status of patients with obesity. These beneficial changes that can explain the remission of T2DM can also explain the prevention of T2DM after metabolic surgery.
Key words: obesity, glycemic control, laparoscopic sleeve gastrectomy, T2DM remission and prevention