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## Effects of sleeve gastrectomy with/without omentectomy in body and metabolic profile of diabetic rats

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**Objective:** To evaluate the physical and metabolic effects in rats treated with high fat diet (HD) and standard diet (SD) and underwent sleeve gastrectomy/vertical gastrectomy (VG) with and without omentectomy.

**Method:** Analytical experimental study, using male Wistar rats that were randomized into six groups consisting of eight animals/each: SD+laparotomy (SD+L), SD+VG, SD+VG+omentectomy (SD+VG+O), HD+laparotomy (HD+L), HD+VG and HD+VG+omentectomy (HD+VG+O). The study was divided into two stages. First phase: Treatment for eight weeks with the respective diets. The high fat diet induced obesity, insulin resistance and type 2 diabetes mellitus. Second phase: Rats were submitted to surgical treatment and fed for four weeks with their respective diets. Throughout the treatment the body weight and food intake were measured (three times/week). At the end of the second phase, the animals were subjected to the insulin sensitivity test (IST). The sacrifice was made by decapitation to collect blood and mesenteric, retroperitoneal and periepididymal adipose tissues. Serum samples were used for biochemical analyzes: Total cholesterol, HDL, triglycerides, glucose, urea and creatinine. Data were analyzed using Graph Pad Prism 5.0, using tests of Two-Way ANOVA and One-Way ANOVA and Bonferroni post-test.

**Results:** The results showed significant decrease in body fat between the following groups: SD+L vs. HD+L, SD+VG+O vs. HD+L and SD+VG+O vs. HD+VG+O. Dietary intake was shown to be increased in the SD+L and HD+L groups and decreasing the treatment groups after surgery. The IST indicated significant improvement in insulin sensitivity in groups HD+VG and HD+VG+O compared to HD+L. Regarding plasma analyzes, the results indicated a significant decrease in total cholesterol levels between HD+L vs. HD+VG and HD+L vs. HD+VG+O. HDL levels did not differ between groups. The results also indicated a tendency of decrease in the levels of triglycerides and glucose in groups HD+VG and HD+VG+O vs. HD+L, but no statistical association. Similar results were observed for levels of urea. Statistically significant association was observed between HD+L vs. SD and HD groups submitted to surgical treatment regarding the levels of creatinine.

**Conclusion:** The study demonstrates beneficial effects of VG with respect to loss of total adiposity and weight, total cholesterol and creatinina levels and improves insulin sensitivity in rats treated with high fat diet and can thus be considered a therapeutic option in the treatment of obesity and its comorbidities. More studies are needed to confirm whether omentectomy would have beneficial effects associated with VG.

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