

Higher HOMA-IR Index is Associated With Increased Excess Weight Loss in Patients With BMI \geq 35kg/M² After Vertical Gastrectomy

Cristina Casas-Tapia^a, Roger V. Araujo-Castillo^a, Lil Saavedra-Tafur^b, Aimeé Bert-Dulanto^c, Alejandro Piscocoyac^d, Alberto Casas-Lucich^e

Introduction

Bariatric surgery is considered the most effective treatment for severe obesity. However, it is not clear if patients with diabetes mellitus or insulin resistance have the same response than patients without those conditions. Our objective was to evaluate association between pre-surgical HOMA-IR index and percentage of excess weight loss (EWL%) one year after bariatric surgery using sleeve gastrectomy.

Methods

Retrospective cohort including patients ≥ 18 years old with BMI ≥ 35 kg/m², who underwent primary sleeve gastrectomy between 2014-2017 at the Avendaño Medical Center, Peru. Only patients with Type 2 Diabetes, Hypertension, or Dyslipidemia were included. EWL% $\geq 60\%$ one year after surgery was considered satisfactory. Crude and adjusted Lineal and Poisson regression with robustness was used to assess statistical associations with EWL%.

Results

Ninety-one patients were included with a median of 34 years, and 57.1% were women. 85.7% had insulin resistance as per HOMA-IR. One year after surgery, 76.9% had a satisfactory EWL%. The lineal model showed .29% less EWL% per each extra year of life ($P=.019$), and .93% more EWL% per each extra HOMA-IR point ($P=.004$).

The adjusted Poisson model showed 2% lower risk of having a satisfactory EWL% per each additional year of life ($P=.050$), and 2% more chance of success per each additional HOMA-IR point ($P=.038$). The results demonstrated consistent improvements in psychological outcomes concurrent with and sometimes without weight loss. Improvements in body image and HRQoL (especially vitality) were closely related to changes in weight. Calculated effect sizes varied considerably and reflected the heterogeneous nature of the studies included in the review. Although the quality of the studies reviewed was generally acceptable, only 9 out of 36 studies included a suitable control/comparison group and the content, duration of intervention and measures used to assess psychological outcomes varied considerably. Further research is required to improve the quality of studies assessing the benefits of weight loss to fully elucidate the relationship between weight loss and psychological outcomes.

Conclusions

There was association between a higher pre-surgical HOMA-IR index and increased EWL% one year after surgery. It is possible that insulin resistance does not affect negatively sleeve gastrectomy outcomes.

Cristina Casas-Tapia^a, Roger V. Araujo-Castillo^a, Lil Saavedra-Tafur^b, Aimeé Bert-Dulanto^c, Alejandro Piscocoyac^d and Alberto Casas-Lucich^e

^aUniversidad Peruana de Ciencias Aplicadas, Perú

^bClínica de Día Avendaño, Perú

^cUniversidad San Ignacio de Loyola, Perú

^{d,e}Hospital Guillermo Kaelin de la Fuente, Universidad Privada San Juan Bautista, Perú