



## P-184 - EFFECT OF NUTRITIONAL INTERVENTIONS ON PLASMA GLP-2 RESPONSE TO A MEAL TEST

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### Resumen

**Introduction:** Glucagon-like peptide 2 (GLP-2) is released by intestinal L-cells in response to luminal nutrient stimulation. GLP-2 affects intestinal mucosa improving permeability, blood flow, and nutrient transport and decrease intestinal mobility. Recently, plasma GLP-2 has been associated with improvements in glucose metabolism by influencing insulin resistance (IR).

**Objectives:** We aimed to explore GLP-2 dynamics in response to a mixed meal test (MMT) in non-morbid obese (OB), morbid obese (MO) and type 2 diabetic patients (MOT2D), before and after weight-loss and its relationship with IR.

**Methods:** OB: dietary restriction with at least 10% weight-loss after 6 months (n = 18, BMI 35.4 ± 3.9 and 31.8 ± 3.7 kg/m<sup>2</sup>, respectively baseline and follow-up). MO: sleeve gastrectomy with 6 months follow-up (n = 18, BMI 45.0 ± 4.8 and 33.1 ± 4.4 kg/m<sup>2</sup>, respectively baseline and follow-up). MOT2D: Roux-en-Y gastric bypass with one-year follow-up (n = 13, BMI 39.3 ± 1.4 and 25.8 ± 2.1 kg/m<sup>2</sup> respectively baseline and follow-up). MMT was performed before and after the follow-up period.

**Results:** At baseline, MOT2D showed higher fasting GLP-2 (FGLP-2) than nondiabetic groups (p = 0.005 and 0.002, respectively frente a OB and MO). Treatment decreased FGLP-2 in OB and MOB (p = 0.003 and 0.002 frente a baseline) and remained unchanged in MOT2D. The AUC GLP2 was higher in MOT2D than in the remaining groups both, before and after weight loss. The incremental AUC GLP-2 was clearly increased after treatment mainly in the surgically treated groups (p = 0.003 and 0.002 frente a baseline, respectively to MO and MOT2D). Considering the relationship with

glucose metabolism variables, in the whole group, the FGLP-2 variability was associated with changes in Homa-IR ( $p = 0.045$ ,  $\rho = 0.297$ ) and ISI index ( $p = 0.048$ ,  $\rho = -0.291$ ). Changes in AUC GLP-2 were associated with changes in BMI ( $p = 0.002$ ,  $\rho = -0.453$ ), AUCInsulin ( $p < 0.0001$ ,  $\rho = 0.627$ ), AUCC-Peptide ( $p = 0.007$ ,  $\rho = 0.384$ ) and, Insulinogenic index ( $p = 0.001$ ,  $\rho = 0.487$ ).

**Conclusions:** Nutrients elicit a different GLP-2 response in presence of type 2 diabetes mellitus. In summary, we propose GLP-2 system as a new player in the physio-pathologic events that accounts in the metabolic glucose derangements such as occurs in T2D or morbid obesity.