

## Adipose Tissue, Appetite, and Obesity OBESITY TREATMENT: GUT HORMONES, DRUG THERAPY, BARIATRIC SURGERY AND DIET

### *Hydroethanolic Extract of *Lampaya Medicinalis* Phil. (Verbenaceae) Decreases Intracellular Triglycerides and Proinflammatory Marker Expression in Fatty Acid-Exposed HepG2 Hepatocytes*

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#### MON-600

**Background:** Non-alcoholic fatty liver disease (NAFLD) is the most common hepatic chronic disease worldwide. NAFLD is characterized by an abnormal triglyceride (TG) accumulation (steatosis) in the liver, that may lead to hepatic inflammation (1). DGAT2 is a key enzyme that catalyzes the final step of TG synthesis and whose expression is elevated in NAFLD (2). FABP4 is a transporter of intracellular lipids and its levels are related with inflammation, characterized by a high expression of proinflammatory cytokines such as TNF- $\alpha$ , IL-6 and IL-1 $\beta$ . Palmitic acid (PA, C16:0) and oleic acid (OA; C18:1) are two of the most abundant fatty acids that participate in the formation of TGs in hepatic cells *in vivo* and *in vitro* (3). *Lampaya medicinalis* Phil. (*Verbenaceae*) is a small bush that grows in the “Puna atacameña” in the North of Chile. The infusion from leaves and aerial parts of the plant has been used by local ethnic groups to treat and cure inflammatory diseases (4). The aim of this study was to assess *in vitro* the effect of the hydroalcoholic extract of *Lampaya medicinalis* (HEL) against OA/PA-induced steatosis and proinflammatory marker expression in HepG2 hepatocytes.

**Methods:** HEL (0.01, 0.1, 1, 10  $\mu$ g/mL) cytotoxicity potential (48 h) was evaluated by Trypan blue exclusion. Cells were exposed for 48 h to 1 mM OA/PA (2:1) in the presence or not of 0.01 or 10  $\mu$ g/mL HEL. Intracellular TGs were assessed with Oil Red O staining and quantified with Nile Red reagent by fluorimetry. mRNA expression of *DGAT2*, *TNF- $\alpha$* , *IL-6* and *IL-1 $\beta$*  was evaluated by qRT-PCR. FABP4 content was assessed by Western blot. The levels of TNF- $\alpha$  and IL-6 in the culture media were analysed by ELISA.

**Results:** HEL was not cytotoxic at any concentration assessed (n=4; p>0.05). The increased content of TG induced by OA/PA was reduced in the presence of HEL (n=7; p<0.05), showing a strong consistency with Oil Red O staining. The increase in the protein content of FABP4 as well as the increment in mRNA expression of *DGAT2*, *TNF- $\alpha$* , *IL-6* and *IL-1 $\beta$*  induced by OA/PA were lower in cells co-exposed to HEL (n=6-9; p<0.05). The incubation with HEL+OA/PA reduced proinflammatory cytokine levels in culture media compared to cells exposed to OA/PA alone (n=6-7; p<0.05).

**Conclusion:** HEL reduces the OA/PA-induced increase in intracellular TG, DGAT2 and proinflammatory cytokine expression and FABP4 content, as well as the levels of secreted proinflammatory cytokines in HepG2 cells. These findings suggest a protective role for HEL against OA/PA-induced steatosis and inflammation, and therefore that *Lampaya medicinalis* may represent a promising therapeutic tool for pathologies such as NAFLD.

**References:** (1) Gluchowski L, et al. Nat Rev Gastroenterol Hepatol. 2017;14(6):343-355. (2) Perry, et al. Nature. 2014;510(7503):84-91. (3) Cunningham P, et al. J Nutr. 2009;139(4):636-639. (4) Morales G, et al. Biol Res. 2014;47:6.

## Neuroendocrinology and Pituitary NEUROENDOCRINOLOGY AND PITUITARY

### *Post-Surgical Metabolic Outcomes in Adult-Onset Craniopharyngioma: A Single Pituitary Center Experience*

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#### MON-276

**Background:**

Craniopharyngiomas, while benign, have the highest morbidity of all pituitary tumors. Hypothalamic obesity (HO), one of the most devastating consequences, is commonly studied in the pediatric population, but few data are available on weight and other metabolic outcomes in adult-onset craniopharyngiomas (AOCP).

**Methods:**

We conducted a retrospective chart review of 49 adult patients with AOCP who underwent surgery between 1/2014 and 5/2019 at an academic pituitary center. Weight, BMI, metabolic diseases (type 2 diabetes, hypertension, hyperlipidemia, cardiovascular disease, OSA), and pituitary hormone deficiencies were recorded pre-surgery and at last follow up and analyzed using paired t-tests or McNemar's test.

**Results:**

Median age was 56 years (51% women), 45% had >1 surgery (range 1-5), and 49% had radiotherapy. Of 72 total surgeries, 54% were craniotomies and 68% of surgeries resulted in subtotal resections. Median follow up was 25 months. Median BMI was 29.2 and 30.5 kg/m<sup>2</sup> at baseline and at last follow up, respectively. Weight was higher at last follow up (mean increase 2.7 kg; p=0.043), with an average of 4% weight gain. Patients with baseline normal and overweight BMI had significant weight gain (mean increase 5.1 kg, p=0.045; mean increase 5.5 kg, p=0.015 respectively), while those who were obese at baseline did not (mean increase 2.0 kg, p=0.302). The proportion of patients with obesity (BMI>30) increased from 37% to 53% (p=0.008). 31% of patients had >5% weight gain, with mean