

## Bioquímica, Fisiologia e Genética Clínica

### **CAFETERIA DIET PLUS CHRONIC STRESS ALTER LEPTIN SERUM LEVEL AND SPECIFIC ADIPOSE TISSUE WEIGHTS IN SIX WEEKS OF TREATMENT**

Isabel Cristina de Macedo, Liciane Fernandes Medeiros, Carla de Oliveira, Cleverson Moraes de Oliveira, Joanna Ripoll Rozisky, Vanessa Leal Scarabelot, Andressa de Souza, Fernanda Ribeiro da Silva, Vinicius Souza dos Santos, Wolnei Caumo, Iraci Lucena da Silva Torres

Introduction: Obesity associated chronic stress is considered as one of the problems on modern societies and it can cause physiological and neuroendocrine changes with alteration of food intake and development of cardiovascular diseases and metabolic disorders. Objectives: This study evaluated the effects of cafeteria diet plus chronic restraint stress upon leptin serum levels and adipose tissue weight and delta weight for six weeks. Materials and methods: Wistar rats were divided in 4 groups: control standard chow (CT); cafeteria diet (CD); stress plus standard chow (S) and cafeteria diet plus stress (CDS). The following parameters were evaluated: adipose tissue weights, delta weight and leptin serum levels. Statistics used: Two way ANOVA/Bonferroni,  $P < 0.05$ ,  $n = 8-10$ ). Results and conclusions: The exposure to cafeteria diet for six weeks was able to induce obesity in rats, since increased the delta weight (CT:  $44.25 \pm 17.83$ , S:  $30.50 \pm 14.72$ ; CD:  $126.00 \pm 11.68$ ; CDS:  $66.50 \pm 7.76$ ). The diet increased leptin levels (CT:  $4.09 \pm 0.92$ ; S:  $2.58 \pm 0.71$ ; CD:  $9.18 \pm 1.16$ ; CDS:  $13.47 \pm 1.48$ ) showed a greater increase in presence of diet and stress, and increased of adipose tissue weight (CT:  $0.055 \pm 0.006$ ; S:  $0.04 \pm 0.005$ ; CD:  $0.09 \pm 0.005$ ; CDS:  $0.08 \pm 0.008$ ). The stress protocol decreased the weight gain. We found significantly increased adipose tissue animals exposed to the high-calorie diet. Leptin levels were increased in animals that received diet, associated to establishment of hyperleptinemia, and further increased when the diet was associated with stress with interaction between independent factors potentiated the leptin serum levels in animals subjected concurrently to two protocols denoting obesity. Apoio financeiro: FIFE / HCPA (projeto nº 09 231), PIBIC CNPq, FAPERGS BIC/ UFRGS, CNPq, CAPES