

CHRONIC STRESS AND/OR HYPERCALORIC DIET: EFFECTS ON 24-HOUR TEMPORAL PATTERN OF LEPTIN LEVELS

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INTRODUCTION: circadian rhythms are present in physiologic, biochemical, and behavioral events and are influenced by environmental patterns as light and temperature. **OBJECTIVES:** verify the temporal pattern of leptin in rat blood serum exposed to chronic stress and/or hypercaloric diet. **METHODS:** 60 male Wistar rats (~250g) maintained under ideal biotery conditions were divided into 4 groups: control (C-standard chow/no stress), diet (D-hypercaloric diet/no stress), stress (S-standard chow/chronic stress) and diet/stress (DS-hypercaloric diet/chronic stress), stress was applied 1h/day between 9am and 12pm, 5 days/week for 80 days. Animals' death was performed in 3 times ZT0-7am, ZT12-7 pm and ZT18-1am. Leptin levels (ng/ml) were measured by ELISA, analyzed by one-way ANOVA/SNK and considered significant if $P < 0.05$. (GPPG-HCPA: 100383). **RESULTS:** group C showed leptin level higher at ZT0 (12.17+1.79) compared with ZT12 (4.4+1.33) and ZT18 (6.79+0.93). The group DS showed leptin levels on ZT12 (14.83+2.31) higher than ZT0 (5.95+1.05) ANOVA $P < 0.05$. At ZT0, the S decreased leptin levels (2.35+1.53) compared to C group (12.17+1.79) and D group (14.78+1.55). Also, the D group increased the leptin levels (14.78+1.55) in relation to interaction DS group (5.95+1.05). Thus, diet increased the leptin levels (13.99+1.92) compared to C and S group (4.4+1.33, 0.76+0.12, respectively). S group decreased leptin levels compared to DS(14.83+2.31). At ZT18, the D group increased leptin levels (16.6+3.18) compared to C and S group (6.79+0.93, 4.57+0.91, respectively, ANOVA $P < 0.05$). **CONCLUSION:** results showed that there are a temporal pattern for leptin release and that stress and hypercaloric diet can deregulate this rhythm. Financial Support: GPPG/HCPA-ILS.Torres- Grant-10-0383);CNPq, CAPES.