EFFECTS OF SHORT-TERM PREDNISOLONE INTAKE ON LEPTIN PLASMA LEVEL AND FOOD INTAKE IN MALE ATHLETES

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Glucocorticoids (GC) are steroid hormone which play a role in the physiologic control of adiposity by regulating energy metabolism and/or food intake. The obesity induced by GC is mostly by promoting energy intake, an effect which may be related to the ability of GC to directly or indirectly affect the central regulation of appetite (Tataranni). Leptin is a protein produced by adipocytes and acts centrally in the hypothalamus as a satiety factor in the regulation of appetite and modulate glucose and fat metabolism (Friedman). Recent data suggest that therapeutic doses of GC may act directly or indirectly on the central regulation of appetite resulting in increasing energy intake with concomitant increased levels of circulating leptin. Indeed, administration of GC in post-menopausal women has been followed by increased level of plasma leptin (Udden) and food intake was enhanced after GC treatment (Tataranni) in healthy male volunteers with increase in body weight. However, eating behaviour change was never studied, to our knowledge, in healthy volunteers with a regular sport practice.

The aim of this study was therefore to examine eating behavior, leptin secretion and body composition before and after short-term GC treatment in athletes.

Ten healthy male volunteers moderately trained (2-3 times per week), are treated either with placebo (PLA, lactose) or with prednisolone (PRED, 60 mg/per day/7 days) with a 3-weeks washout period, according to a double blind and randomized protocol. Nutrient intake was assessed with a three-day dietary survey and analyzed by computer software (Bilnut\textsuperscript{©}), body composition was determined by DEXA and blood samples were collected to determine leptin values before and after each treatment.

Leptin was significantly increased (p<0.01) after chronic PRED treatment. Total energy intake and macronutrients intakes were not modified by PRED ingestion but calcium intake was lower after PRED vs PLA treatment (p<0.05). There were no significant differences in body weight and body composition values after PRED or PLA treatments.

Absence of impact of PRED treatment on total caloric intake and on body composition might be due to high leptin secretion after PRED treatment. The anorexigen effect of leptin could counteract the promoting effect of GC on appetite. Further studies are required to explain the interaction observed between leptin level and GC action on the regulation on appetite and on body composition in athletes subjects, with regard to the physical status and the gender of the subjects.


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