EFFECTS OF HIGH PROTEIN DIET ON CHOLECYSTOKININ HORMONE AND FOOD INTAKE OF RATS SUBJECTED TO RUNNING TRAINING


Resumo

OBJETIVOS:

The intake of high protein diet by young physical exercise practitioners may be harmful, once the degradation of large quantities of this nutrient can generate undesirable responses as anorexic effects. Therefore, the present study evaluated the effects of a high protein diet, rich in albumin, on cholecystokinin (CCK) hormone levels and food intake of rats subjected to treadmill running training (TRT).

MÉTODO E RESULTADOS:

Young male Wistar rats were separated into 4 groups (n=10/group), according to the diet and the practice of physical training or not: Sedentary Normoprotein (SN; albumin 17% 30-120 days); Trained Normoprotein (TN; albumin 17% 30-120 days; 60-120 days subjected to TRT); Sedentary High Protein (SH; albumin 35% 17% 30-120 days); Trained High Protein (TH; albumin 35% 30-120 days; 60-120 days subjected to TRT). The TRT consisted in treadmill running, 5 days/week, during 8 weeks, at the intensity of 12m/min. Body weight gain and food intake were registered weekly. The CCK plasmatic levels were measured by radioimmunoassay (13C counting). The results were analyzed using the two way Anova (p<0.05). The body weight gain (g) of TH (172.4±19.4) and SH (175.6±18.5) groups where lower if compared to other groups (SN:248.9±17.3; TN:210.7±20.1), being TN < SN. The food intake values (g/100 body weight) of TH (6.8±1.2) and SH (6.4±1.4) groups were lower in relation to SN (9.5±1.8) and TN (9.6±1.7) groups. The CCK levels (pmol/L) of SH (3.3±0.01) and TH (3.1±0.02) groups were higher when compared to SN (0.9±0.01) and TN (1.1±0.03) groups.

CONCLUSÃO:

Our results demonstrated that high protein diet administration increased the satiety CCK hormone release, leading to decrease of both food intake and body weight gain at the end of experiment. In addition, we observed that the TRT was not able to avoid this situation. We suggest that regular excessive intake of protein for long periods, during physical exercise, may deregulate both hunger and satiety mechanisms and body weight control. Such occurrences are negative with respect to expected gains when physical exercise is performed.