NORMALIZATION OF SERUM T4 DURING CALORIC RESTRICTION INDUCES SIGNIFICANT LOSS OF BODY PROTEIN CONTENT

Renata L. Araujo , Bruno M. Andrade, Alvaro F. S. Padrón, Monique S. Leandro, Denise P. de Carvalho.
Laboratório de Fisiologia Endócrina, Instituto de Biofísica Carlos Chagas Filho, UFRJ – Brazil.

Introduction - Caloric restriction (CR) leads to reduction of serum leptin and thyroid hormones (TH) levels, which may contribute for the resistance to further weight loss. Male Wistar rats were divided into: control (C) and 40% food deprivation (CR, 30 days), receiving or not 1 or 5 ug T4/100g b.w for the latest 15 days of CR. **Results** - CR produced a significant ($p<0.05$) reduction in serum T3, T4, TSH and leptin ($p<0.0001$). Both doses of T4 normalized serum T3 and T4 levels, and did not change serum leptin. Type 1 deiodinase activity (D1) in the liver was reduced by CR and increased in a dose dependent manner by T4 in both C and CR groups. CR produced a significant reduction in body weight and an additional trend of reduction was observed in CR group treated with the higher T4 dose ($p=0.05$). Body protein content was significantly reduced by the administration of both doses of T4 to control and CR rats. **Conclusion** - In conclusion, the replacement of a low dose of T4 that is just able to normalize serum TH concentrations during CR does promote a further loss of weight, however it does not spare the protein component of body.