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Influence of moderate physical training on the GH/IGF-1 axis in diabetic rats
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The influence of moderate physical training on serum growth hormone (GH), insulin-like growth factor -1 (IGF-1) and binding protein (IGFBP-3) in experimental diabetic rats was investigated. Male Wistar rats were divided into 4 groups, sedentary control (SC), trained control (TC), sedentary diabetic (SD) and trained diabetic (TD). Experimental diabetes was induced of Alloxan (35mg/b.w.) The training program consisted by swimming 5 days/week, 1 h/day, supporting a load of 2.5% b.w., during 6 weeks. Then, the rats were sacrificed and blood was collected for determinations of serum glucose, insulin, GH, IGF-1 and IGFBP-3. Samples of liver were used to evaluate glycogen, protein and DNA contents. The results were analyzed by ANOVA, and Bonferroni test and the significance level was set at 2.5%. Diabetes decreased serum GH, IGF-1, IGFBP-3 and liver glycogen stores in SD group. Physical training promoted increase in serum IGF-1 in both TC and TD groups (SC=82±15; TC=103±13; SD=77±16; TD=112± 29 ng/ml) and liver glycogen store in TD group when compared to SD (SC=5.2±1.2; TC= 6.2±1; SD=2±0.5; TD=5±1.8 mg/100mg). Therefore, physical training contributes to the increase in liver glycogen content and to rise of insulin-like growth factor level in diabetic rats. It was concluded that moderate physical training promotes important adaptations related to GH-IGF-1 axis in diabetic organisms.

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