Abstract

Introduction: Evidences suggest that fat intake, visceral obesity and intracellular lipids are related to insulin impairment. Objective: The objective of the present paper was correlate visceral obesity and metabolic alterations in control (CTR) and hyperlipidic cafeteria diet (CFT) fed animals. Methods: After 6 months of diet treatment, liver and muscle of the male rats were utilized to determined glucose uptake and glycogen metabolism after administration of 0.4 I U/kg insulin in vivo, and correlate the visceral adiposity to these two parameters. Results: Ample range of physiologic answers to body composition in metabolic profile of the both diets was found. No differences were found in glycemia and triacylglycerol after insulin action in both groups, however CFT group accumulated higher adiposity, mostly visceral fat, and showed lower glycogen content in the liver. We also found an inverse correlation between visceral adiposity and glucose uptake and a decrease of the glycogen synthase active form in the liver. CTR animals demonstrated an inverse correlation between glucose uptake and visceral adiposity in the muscle. Discussion and conclusion: It was observed a variability of metabolic alterations in animals which can be related to degree of accumulation of abdominal adiposity and ingestion of diet fats. Further studies will be required to clarify the reasons for the observed liver alterations in CFT and muscle alterations in CTR animals.

Keywords