

Effect of Whey Protein on Lipid Metabolism and Paraoxonase Activity of Rats

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Whey proteins are known for its antioxidant potential. However, its effects on lipid metabolism are inconclusive. The aim of this study was to evaluate the effect of whey protein on lipid metabolism and paraoxonase activity of rats. 24 Fisher rats were divided in 3 groups, receiving the following diets: C group, standard diet (AOAC); WP group, modified AOAC diet, with whey protein instead of casein; CW group, modified WP diet with 30%/70% whey protein/casein. The rats were housed under standard conditions of temperature (22-24°C), humidity (50-65%) and dark–light (12-12h) cycle. Diet and water were available ad libitum. After 6 weeks, blood samples were collected from brachial plexus, immediately centrifuged and assayed. WP diet generated higher values of total cholesterol and HDL-cholesterol ($p < 0.05$). WC diet did not promote the same effects (1,74±0,20mmol/L, 2,02±0,29mmol/L and 1,64±0,23mmol/L for total cholesterol, and 0,79±0,05mmol/L, 1,10±0,18mmol/L and 0,68±0,15mmol/L for HDL-cholesterol for C, W and WC groups respectively). Non HDL-cholesterol was affected by any diet (0,92±0,20mmol/L, 0,94±0,19mol/L and 0,92±0,15mmol/L for C, W and WC groups respectively). Also, the WP diet promoted higher activity of paraoxonase (138±15,50U/mL, 160,60±14,02U/mL and 96,30±18,60U/mL for C, W and WC groups, respectively). In conclusion, our data suggest an important effect of whey protein on lipid metabolism and paraoxonase activity. Nevertheless, substitution of 30% of casein by whey protein (WC) did not promote the same effects.

Keywords: Whey protein, rat, cholesterol, paraoxonase