



Body weight, concentration of plasma leptin and serum testosterone of rats in response to feeding of chitosan

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Abstract

AIM: To evaluate the effect of chitosan on rat body weight, concentration of plasma leptin and serum testosterone.

METHODS: Five groups of rats were respectively given access to basic diet, high fat diet and high fat diet with different doses of chitosan (1.5%, 3.0% and 6.0% of chitosan in high fat diet respectively) for 7 wk. All rats were weighed once a week. By the end of 7 wk, the animals were sacrificed and their blood samples were taken, the concentration of plasma leptin and serum testosterone were determined by RIA Kit method.

RESULTS: At the end of 7 wk, the average body weight of rats treated with high-fat diet was 67.3 g heavier than that with the basic diet, however, the average body weight of rats treated with high doses of chitosan in high-fat diet was 56.3 g lighter than that with high-fat diet ($P < 0.01$). In addition, plasma leptin concentration in rats treated with high fat diet was significantly different from those with basic diet ($P < 0.01$); plasma leptin concentration in rats treated with high dose of chitosan in high-fat diet was significantly lower than those with high-fat diet ($P < 0.01$), but was significantly higher than those with basic diet ($P < 0.05$). Serum testosterone level in rats treated with high-fat diet was significantly lower than those with basic diet ($P < 0.01$). Serum testosterone levels in rats administrated high dose of chitosan in high-fat diet were significantly lower than those with high-fat diet ($P < 0.01$).

CONCLUSION: Chitosan prevents the increase of rat body weight induced by high-fat diet, and lowers plasma leptin and serum testosterone in rats.

Key words: Body weight; Attention; Testosterone/blood; Chitosan; Nutrition; Rats; Plasma

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