

Effect oil pulp and tea leaves of avocado *Hass* associated, or not, with swimming exercise on body weight of *Wistar* male rats.

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Abstract

Bioactive compounds and exercise can modulate weight gain. We investigated the effect of the treatment with pulp oil or leaves tea from *Hass* avocado and/or swimming exercise on body weight of male *Wistar* rats.

Key words: body-weight, bioactive-compounds, rats.

Introduction

MUFA and polyphenols are bioactive compounds which are present in avocado oil and avocado leaf tea, are in an association with weight loss^{1,2}.

This study aimed to determine the effect of the treatment with 2% omega-9 from *Hass* avocado pulp oil or avocado leaves tea plus swimming exercise on body weight of male *Wistar* rats.

Results and Discussion

In the seven first weeks the animals were divided between 3 groups: Standard (S) (n=4), high fat (HF) (n=15) and high fat (HE) (n=15). After this period the treatment could be initiated, with duration of five weeks, and the HF group was divided in three another groups (n=5). The first one keep the high fat diet (HF), and the second one was replaced by standard diet more avocado oil with 2% omega-9 (TO) instead of high fat diet. The last one's water was replaced by avocado leaves tea with standard diet (TC). HE group was divided into 4 groups (n=5): exchange of high fat diet for standard diet and/or addition of bioactive compounds and swimming exercise for 5 minutes/day in the last two weeks. The first remained with the high-fat diet plus exercise (HE); the other was exchanged high fat diet to standard diet plus exercise (HTE), the TEO group was added to the diet avocado oil-pulp with 2% omega-9 plus exercise and TEC group were exchanged water by avocado leaves tea plus exercise. During the experiment the rats was weighted once a week. The hydric and dietary consumption were monitored two and three times a week, respectively.

About the rats growth, there was a statistic difference between the sixth and seventh weeks in the S and HF groups ($p < 0,05$), However in treatment period the animals did not show distinction. About the weight gain, TO and S group decrease in 15% and 9% respectively, while TC group increase 14 %, when compares with HF.

After the eighth week, the animals ate avocado oil (TO) and tea (TC) differed statistically than HF group ($p < 0,05$). The total TO and TC groups consumption showed statistically difference than the S group, but not in the HF group ($p < 0,05$). In the fourth first treatment weeks, there were significant difference consumption of tea ($p < 0,05$) when compares the S and HF groups. Just the avocado oil was effective compared to the avocado leaves tea to reduce weight gain, not compromising the animals growth. The hydric and dietary consumption were monitored two and three times a week, respectively. As for growth, HE group had the lowest growth compared to the others ($p < 0.05$) in all weeks. From the 8th week, HTE and TEO groups showed the same growth as the SE, but TEC group showed differed from HE only at 9 and 10 weeks ($p < 0.05$). The groups SE, TEO and TEC had a reduction in weight gain, 16% , 9% and 11%, respectively and only the HTE group showed 6% weight gain in comparison of the group HE ($p < 0.05$). TEO is more consumption diet from the 8th week and had a drop in two weeks of exercise in relation to HE group ($p < 0.05$). There was no significant difference of tea consumption ($p < 0.05$).

Conclusions

There is not associate with exercise just the avocado oil was effective compared to the avocado leaves tea to reduce weight gain, not compromising the animals growth. When associate exercise they provide both the weight reduction, however the group that consumed tea showed lowering effect of greater weight.

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