FREEZE-DRIED JABOTICABA PEEL AND FREEZE-DRIED JABOTICABA PEEL TEA SUPPLEMENTATION REDUCED OBESITY IN RATS

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Jaboticaba is a great source of bioactive compounds, but its consumption is limited to the harvest period. Jaboticaba tea is a viable alternative consumption, regardless of the time of year. The objective of this work was evaluated the effect of freeze-dried jaboticaba peel (FJP) and freeze-dried jaboticaba peel tea (JPT) on obesity development. Therefore, 36 Wistar rats were divided in six groups: AIN-93M normal control diet; HFF (obese control) feed with high-fat and fructose diet; Prevention FJP (P.FJP) feed with HFF diet supplemented with 2% of FJP for 12 weeks; Treatment FJP (T.FJP) feed with HFF diet supplemented with 2% of FJP for 6 weeks; Prevention JPT (P.JPT) feed with HFF diet and had the water substituted by JPT in the 2% concentration for 12 weeks, and Treatment JPT (T.JPT) feed with HFF diet and had the water substituted by JPT in the 2% concentration for 6 weeks. Faeces were collected in the last experimental week. The weight gain, diet consumption, diet intake and tea intake were monitored. After 12 experimental weeks, the animals were euthanized, blood was collected and liver and adipose tissues were weighed. The serum total cholesterol and HDL cholesterol were measured. The livers were frozen, freeze-dried and macerated. Faeces were dried and macerated. Lipid concentration in liver and faeces were measured by Bligh & Dyer. Statistical differences were determined by T test between AIN-93M and HFF groups and ANOVA followed Tukey's test among HFF and supplemented groups with 0.05 of confidence interval. The energy intake was not different between the groups. Weight gain, epididymal adipose tissue, mesenteric adipose tissue and the retroperitoneal adipose tissue weights, as well as the fat percentage in the liver were higher in the HFF group compared to AIN-93M group. The JPT and FJP supplementation for 6 or 12 weeks reversed the weight gain and fat accumulation in the adipose tissues and liver. The total cholesterol was not different between groups, but HDL cholesterol was lower in HFF group compared to AIN-93M group. P.JPT and P.FJP groups showed increase in HDL cholesterol level, but the T.JPT and T.FJP groups were not different than HFF group. The fat excretion in faeces was not different between the groups, except T, JPT group which presented lower levels, but we believe that this is an experimental error. Thus, FJP and JPT showed a positive effect on obesity development and lipid accumulation.

Key words: Freeze-dried jaboticaba peel, obesity, phenolic compounds

Introdução

Jaboticaba peel is a great source of bioactive compounds, as anthocyanins, ellagic acid and tannins. Several health benefits have been attributed to these bioactive compounds, such as antioxidant and antiobesogenic effects. Jaboticaba consumption is limited to the harvest period, thus it is necessary to make feasible the consumption of this fruit all year round. Was evaluated the antiobesogenic effect of freeze-dried jaboticaba peel supplementation (FJP) and freeze-dried jaboticaba peel tea (JPT) in induced obese rats.

Resultados e Discussão

The JPT and FJP supplementation for 6 or 12 weeks reversed the weight gain and fat accumulation in the adipose tissues and liver. The HDL cholesterol was lower in HFF group compared to AIN-93M group, but total cholesterol was not different between groups. P.JPT and P.FJP groups showed increase in HDL cholesterol level, but the T.JPT and T.FJP groups were not different than HFF group. The fat excretion in faeces was not different between the groups, except T, JPT group which presented lower levels, but we believe that this is an experimental error. Thus, FJP and JPT showed a positive effect on obesity development and lipid accumulation. Nevertheless, others studies with smaller treatment periods with freeze-dried jaboticaba peel, have not showed positive effects on obesity development and lipid accumulation.

Conclusões

The FJP and jaboticaba tea showed a potent antiobesogenic effect and ameliorates the lipid profile in the animals of prevention groups. They can be used as allies in the prevention and treatment of obesity.

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