



Weight Loss Effects of Simultaneous and Separate Administration of Garcinia Cambogia, Glucomannan, Caffeine, and Tea Extract

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ABSTRACT

Introduction: Obesity is a growing problem worldwide. Research has previously evaluated the effect of green tea, caffeine, Garcinia cambogia, and glucomannan on weight loss. However, no tests have been conducted on the effect of the combined use of all four substances on weight loss or preventing weight gain. This study aimed to investigate the effects of weight loss with green tea, caffeine, G. cambogia, and glucomannan alone and in combination in mice.

Methods and Materials: To Prepare interventions, a certain number of tablets were taken and ground to powder based on the amount of the active ingredient. For each mouse, 4 mg of green tea, 0.72 mg of caffeine, 5 mg of G. cambogia, and 2 mg of glucomannan were dissolved in water. Six out of nine mice were administered, for which six different drug regimens were given for 10 days. The first group received only water, while the others received green tea, caffeine, G. cambogia, and glucomannan. The last group received all of the interactions together. Before blood sampling, mice were anesthetized, and blood was sampled from the mouse's heart in compliance with ethical principles. The blood sugar test of the animals was carried out every three days from the tail of the mice by a glucometer. Animal weight was measured and recorded with a digital scale. The results were reported as mean $\pm$ SEM using SPSS software and analyzed using a one-way ANOVA test.

Results: The weight loss, cholesterol serum, HDL-c, LDL-c, triglyceride, and Lipase enzyme serum levels of the six groups was as follows, respectively: First group ($1.15\% \pm 1.23$, 136.87 ± 5.23 , 6 ± 2.92 , 96 ± 2.92 , 121 ± 5.79 , and 27.33 ± 2.08); second group ($5.39\% \pm 4.36$, 115 ± 4.14 , 90.76 ± 4.75 , 90.76 ± 4.75 , 114.25 ± 9.19 , and 37.25 ± 4.64); third group (4.15 ± 2.1 , 144.4 ± 4.87 , 77.5 ± 3.92 , 77.5 ± 3.92 , 91.5 ± 4.31 , and 39.66 ± 2.21); fourth group ($8.76\% \pm 2.89$, 124.5 ± 3.13 , 100.75 ± 3.75 , 100.75 ± 3.75 , 88.12 ± 4.07 , and 41.5 ± 1.98); fifth group ($6.58\% \pm 4.41$, 114.83 ± 4.87 , 89.83 ± 5.55 , 89.83 ± 5.55 , 90.83 ± 7.5 , and 40.17 ± 2.28); sixth group ($18.68\% \pm 6.07$, 105.25 ± 2.28 , 85 ± 3.94 , 85 ± 3.94 , 75 ± 2.55 , and 55.75 ± 5.65).

Conclusion and Discussion: According to the findings, the combined treatment played a significant role in weight loss and reduction of cholesterol, LDL-c, and triglyceride levels, while also increasing lipase enzyme activity. However, there was no significant difference in HDL-c levels. Additionally, It was observed that the amount of water and food consumed in the group receiving the combined treatment was higher than that of the other groups. Furthermore, their blood sugar levels were lower than the others.

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