



Effect of Xenical and Green Coffee on BMI and Lipid Profiles among Jordanian People

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ABSTRACT

The purpose of study to shows the effect of Xenical drug and Green coffee on BMI and lipid profiles among Jordanian people. Methods 30 individuals with obese , age 30 years or older were recruited for participating in the study, divided into three groups each one 10 persons. Group 1 taken 120mg Xenical. Group 2 Green coffee 200 mg/day. Group 3 Xenical and Green coffee. All three groups are compare with control group 5person. All the groups and control allowed to take their routine diet only2000 thousand Calories per day . BMI and lipids level were measured at baseline starting day and after one month. Results showed reduction in the BMI in all groups control group,group2, group1 and group 3 respectively. Also all participates were showed decrease in blood glucose, cholesterol, triglyceride, and low-density lipoproteins (LDL) and increased in high-density lipoproteins (HDL). Conclusion Administration of green coffee showed lowering level FBG and lipids profile also BMI.

Keywords: Xenical drug; Green coffee; BMI; Lipid profiles

INTRODUCTION

In recent decades, obesity has become a serious clinical disease that is contributed by a high-fat diet. Many factor lead to increase obesity such as decreases in physical activity and Increases in unhealthy food options. The World Health Organization (WHO) predicts that 700 million of them will be obese. And 2.3 billion adults will be overweight [1]. Obesity is a cause for high blood pressure (hypertension) and diabetes and Jordan is one of the countries that are largely affected. Globally, more than half a billion human beings are obese and almost suffer from type 2 diabetes [2].

"Green coffee" beans are coffee seeds (beans) of Coffea fruits which are found before roasting. The roasting manners of coffee beans lead to reduced quantities regarding the chemical chlorogenic acid. Therefore, green coffee beans have a higher level of chlorogenic acid compared to regular, roasted coffee beans. Chlorogenic acid in green coffee is thought to have many health benefits [3]. Chlorogenic acid (CGA) is a natural chemical (antioxidants) compound It helps in maintaining blood pressure, blood reduce heart diseases, sugar levels [4]. The mechanisms of action of the chlorogenic acids include modulating glucose metabolism, reducing glucose absorption through the intestines, lowering postprandial glucose, and inhibiting fat accumulation [5].

Orlistat (Xenical) is the drug treatment of the obesity. The mechanisms of action of the xenical on the gastrointestinal system and works by reducing fat absorption in the gut which is eliminated in bowel movements [6]. Orlistat have many benefits such as: blood pressure levels and reduces cholesterol and improves glycemic [7].

MATERIALS AND METHODS

Data Collection

A pre/posttest randomized study design and utilized to show the effect of Xenical and Green coffee on BMI and lipid profiles among Jordanian people. Then comparison between 2 results to improve the effects of Green coffee on BMI and lipids levels. The study was conducted in Al Mafraq city in Jordan 30 individuals with obese, 30 males of age 30 years or older were recruited for participating in the current study. They are divided into three groups each one 10 persons. Group 1 taken 120 mg Xenical. Group 2 Green coffee 200 mg/day. Group 3 Xenical Green coffee. All three groups are compare with control group 5person ,all the groups are allow to take only 2000 thousand Calories per day. The study was approved by medical ethical committee of the Al-alBays University Faculty of Sciences. BMI and lipids level were measured at baseline starting day and after one month. All participates were allowed to take their routine diet only2000 thousand Calories per day. The research did not suggest any alterations in diet, or exercise. Compliance was monitored by contact with the subjects.

Collection of Blood Samples and Biochemical Analysis

Approximately 8ml blood samples were withdrawn intravenously from each individual into vacuum tubes at starting day before administration of Xenical, Green coffee and at the end of 4 weeks for biochemical analysis procedures.

Biochemical Measurements

Serum samples were obtained by centrifugation of blood within 1hour at 2000g for 10 min at 4°C, and transferred immediately by cold boxes filled with ice to the Albayan consulting laboratory (Mafraq-Jordan) to measure blood glucose level (FBG), and lipid profiles.

Statistical Analysis

Collected data were tabulated and statistical analysis was done utilizing the computer data processing (SPSS version 15). A probability value (P) of <0.05 was considered to be statistically significant.

RESULTS

Table 1 shows the effect of Xenical and green coffee on BMI at zero time and after one month. The reduction in BMI was 2.91 but after treated with xenical for one month was 8.49 and with green coffee was 6.84, also the reduction of BMI treated with (xenical and green coffee together) for one month was 10.33.

Table 1. Shows the effect of Xenical and green coffee on BMI among Jordanian people

Groups	BMI% at zero time	BMI %After one month	Reduction kg
Control	33.13	32.12	2.91
1. Xenical	32.05	29.11	8.49*
2. Green coffee	31.33	28.96	6.84*
3. Xenical Green coffee	33.21	29.63	10.33*

*Significant (P) of < 0.05.

Table 2 shows the effect of Xenical and green coffee on blood glucose shows reduction in blood glucose level in all groups. Cholesterol, triglyceride, and low-density lipoproteins (LDL) shows reduction and increased in high-density lipoproteins (HDL) in all groups.

Table 2. Effect of Xenical and green coffee on lipid profiles among Jordanian people

Groups	(FBG) Mean ± SD(mg/dl)	Triglyceride Mean ± SD(mg/dl)	Cholesterol Mean ± SD(mg/dl)	HDL Mean ± SD (mg/dl)	LDL Mean ± SD (mg/dl)
(1)Xenical Before	129.10 ± 9.5	193.8 ± 9.8	296 ± 9.5	44.2 ± 4.3	150.1 ± 9.4
After	115.86 ± 9.3	177.5 ± 6.5	267.6 ± 8.2	48.2 ± 3.8	140.7 ± 6.6
(2) Green coffee Before	125.87 ± 4.6	179.5 ± 6.0	282.1 ± 7.9	42.4 ± 6.1	146.4 ± 8.2
After	113.86 ± 9.3	158.8 ± 4.0*	262.3 ± 4.7*	48.4 ± 5.6*	135.7 ± 6.1*
(3) Xenical Green coffee Before	141.22 ± 5.6	219.4 ± 6.9	316.2 ± 9.5	37.4 ± 3.8	161.4 ± 7.7
After	128.12 ± 3.7	198.2 ± 7.3*	294.5 ± 4.7*	46.7 ± 7.2*	142.2 ± 4.8*

*Significant (P) of < 0.05.

DISCUSSION

In the present study about green coffee bean extract demonstrates that the chlorogenic acid in green coffee regulates hypertensive, vasoreactivity, and glucose metabolism [8-9]. Furthermore, decreases in lipid accumulation and metabolism related genes, proteins, and body fat composition provide scientific evidence to support green coffee as a supplement to prevent obesity. Adipocytes store energy in triglyceride form and break down lipids into free fatty acids when energy is required [10]. Adipocytes play a major role in obesity and related disease through the secretion of wide range of regulatory factors. Remarkably, adipocytes hormonally control metabolism through the secretion of autocrine, paracrine, and endocrine hormones and effect insulin sensitivity, immune function, eating behavior, and most importantly regulate differentiation of preadipocytes into adipocyte [11]. Chlorogenic acid is also a dietary polyphenolic compound with antioxidative activity. Thus, it is suggested that caffeine, chlorogenic acid and other polyphenolic compounds in green coffee act synergistically to suppress body weight gain and visceral fat accumulation. Additionally, recent reports of chlorogenic acid provide regulatory effects of glucose and lipid concentrations in diabetes and obesity [12-14]. The results showed that consumption of green coffee for one month caused a suppressive effect on body fat level. Green coffee contains 10% caffeine and 27% chlorogenic acid as the principal constituents, and these constituents showed a tendency to suppress body weight gain and visceral fat accumulation also caffeine is known to be a lipolytic compound [15]. Orlistat reduced fat absorption, thus is effects on the fatty acid composition of serum lipid fractions in obese subjects who were taking a dose of orlistat similar to that in the present study [16].

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