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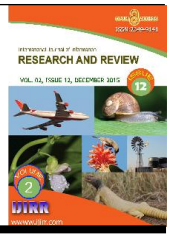

Research Article

EFFECT OF *ALLIUM SATIVUM* CONSUMPTION ON TOTAL CHOLESTEROL

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ABSTRACT

The purpose of the study was to find out the effect of allium sativum (garlic) consumption on total cholesterol. To achieve this purpose of the study, thirty subjects were selected from department of Physical Education and Sports Sciences, Annamalai University, Annamalainagar, India. The selected subjects were the age between18 to 25 and they were examined by a qualified physician and certified that they were medically and physically fit to participate above programme. The selected subjects were randomly divided into three groups of 10 subjects each group. Group one acted as control group, experimental group I (placebo) and experimental group II (garlic consumed group). The experimental group subjects were underwent regular practice for five weeks. The subjects were tested on selected criterion variable such as total cholesterol prior to and immediately after the training period. The analysis of covariance (ANCOVA) was used to find out the significant differences if any, between the experimental group and control group on selected criterion variable. The result of the present study has revealed that there was garlic has the effect to decrease the level of cholesterol among college men.

INTRODUCTION

Among the four stages of life, youthful stage is the most attractive and with health, strength and endurance one can achieve many laurels in one's life. But the fact is that though it is the attractive stage of life, it is short lived and cannot be brought back at any cost. As the age advances the strength to fight against all odds including diseases comes down drastically. One of the reasons for such a state is the improper nutrition ie intake of food. It needs no emphasis that he who partakes compatible food in proper quality and quantity and in time with a control over his senses will not suffer from disease. Ayurvedic drugs, on the other hand, can be given to both patients and healthy individuals simultaneously. In patients they cure diseases and in healthy individuals they prevent diseases and promote positive health. Among these herbs and spices "Allium Sativum or Garlic" is a very important medicinal plant.

It is famous in its power to cure the diseases and to develop the positive health in human beings. Allium Sativum (Garlic) is a wonderful and powerful medicine among herbs. Garlic is a member of lily family closely related to onions and leeks. It has been cultivated for thousands of years for its therapeutic benefits by the ancient Egyptians, Greeks, Romans, Indians and Chinese.

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There are some miths related to garlic. European legend says that if a man chews a garlic bulb during a footrace, no one will be able to get ahead of him (small wonder). There is a Telugu saying that one bulb of garlic is equal to ten mothers. This means the protective or preserving power of garlic. Garlic is traditionally a peasant spice and remedy. In ancient Egypt, it was fed to laborers building the pyramids to give them strength and courage and it was an important part of the stores of military triremes. In ancient Greek athletes chewed garlic before the Olympic Games to give them vitality and endurance. The Roman patrician Virgil recommended it as a food for laborers to keep them strong during the harvest. Many of the legends surrounding it have to do with strength, speed and endurance.

Garlic is endowed with several medicinal properties. It is stimulant, diaphoretic, expectorant, diuretic and tonic. It is rubefacient when applied externally. It is used as an anthelmintic and emmenagogue. The juice of garlic is used for various aliments of the stomach including amoebic dysentery. It is also used as an anti tubercular drug and in the treatment of epilepsy. It is reported to be anticholeric. Garlic reduces the blood sugar level. It is an antifertility tonic drug showing oxytocic activity. In general Allium Sativum is considered as one of the most valuable foods on this planet. It has been used since biblical times and is mentioned in the literature of the ancient Hebrews, Greeks, Babylonians, Romans and Egyptians. It has the power to cure and prevent the diseases and also to develop the positive health.

So garlic may be used as an antibiotic, as an immune system enhancer, as a cancer preventive, as a cardiovascular guardian, as a controller of diabetes and as an enhancer of physical health.

MATERIALS AND METHODS

To achieve the purpose of the study 30 subjects were selected from Depaertment of Physical Education and Sports Sciences, Annamalai University, Annamalainagar. They were in the age between 18 to 25 years. For this study total cholesterol was chosen as a variable. The selected subjects were randomly divided into three groups of 10 subjects each group. Group one acted as control group, experimental group I (placebo) and experimental group II (garlic consumed group). The experimental group subjects were underwent regular practice for five weeks. Pre test for all the three groups was conducted 24 hours before the experiment was begun. Post test also was conducted for all the three groups 24 hours after five weeks experiments.

Statistical Analysis

The data collected from two experimental groups and one control group before and after supplementation of Allium Sativum syrup and placebo syrup, the scores of total cholesterol was statistically examined for significant difference if any, by applying analysis of covariance (ANCOVA). After eliminating the influencing of pre test, the adjusted post test means of experimental groups and control group were tested for significance by using ANCOVA. If there were any significant difference found, Scheffee's post hoc test was applied.

RESULTS

Total Cholesterol

The analysis of covariance on the data obtained for total cholesterol of pre test and post test of control group, placebo group and garlic consumed group have been presented in the Table 1. The table shows that pre test means of control group, placebo group and garlic consumed group were 134.8, 135.2 and 133.4 respectively. The obtained 'F' ratio of 0.03 is less than the table value of 3.35 for df 2 and 27 required for significance.

The post test means of control group, placebo group and garlic consumed group were 135.9, 135.2 and 129.4 respectively. The obtained 'F' ratio of 0.43 is less than the table value of 3.35 for df 2 and 27 required for significance. The adjusted post test means of control group, placebo group and garlic consumed group were 135.61, 134.56 and 130.33 respectively.

The obtained 'F' ratio of 4.58 is greater than the table value of 3.37 for df 2 and 26 required for significance. The results of the study indicate that there is a significant difference among adjusted post test means of control group, placebo group and garlic consumed group. Further to determine which of the paired means had a significant difference Scheffé *S* test was applied and the result was presented in Table 2.

The mean differences of total cholesterol between the control group and garlic consumed group, control group and placebo group and placebo group and garlic consumed group were 5.28, 1.05 and 4.23 respectively. The results of the study shows that five weeks of supplementation of allium sativum produced significant decreased in total cholesterol.

Table 1. Analysis of covariance for pre test and post test on control group, placebo group and garlic consumed group of total cholesterol

	Control Group	Exp. Group I	Exp. Group II	S O V	Sum of Squares	Df	Mean Squares	F ratio
Pretest mean	134.8	135.2	133.4	B	17.87	2	8.93	.03
SD	±19.36	±18.4	±19.59	W	9871.6	27	365.61	
Posttest mean	135.9	135.2	129.4	B	254.6	2	127.3	.43
SD	±17.95	±17.92	±15.72	W	8018.9	27	296.99	
Adjusted posttest mean	135.61	134.56	130.33	B	155.8	2	77.79	4.58*
				W	441.43	26	16.98	

* - Significant at 0.05 level of confidence (expected table value 3.35) SOV – Source of Variance Df – Degrees of Freedom SD – Standard Deviation

Table 2. Scheffe's test for the differences of the adjusted post test paired means of total cholesterol

Adjusted post test means				
Control Group	Placebo Group	Garlic Consumed Group	Mean difference	Confidence Interval
135.61		130.33	5.28*	4.78
135.61	134.56		1.05	4.78
	134.56	130.33	4.23	4.78

* - Significant at 0.05 level of confidence

DISCUSSION

The results of the study reveal that the supplementation of allium sativum has a significant effect in the decreases of the total cholesterol. The result of the study is in consonance with Saba Famaz *et al*, (2011), Hamed and Alobaidi (2013), Tumer, Molgaard and Marckmann, (2004) and Bordia, Verma and Srivastava, (1998).

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