Effect of Yogic Practices on Total Cholesterol and High Density Lipoproteins among Male Diabetic Patients

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Abstract

The purpose of the present study was to find the effect of yogic practice on total cholesterol and high density lipoproteins. For this purpose, thirty male diabetic patients residing in and around Pondicherry in the age group of 35 – 55 years were selected. They were divided into two equal groups, each group consisted of fifteen subjects, in which group – I underwent yogic practices and group – II acted as control who did not participate in any special training apart from their regular day to day activities. The training period for this study was six days in a week for twelve weeks. Prior to and after the yogic practice period, the subjects were tested for total cholesterol and high density lipoproteins. Total cholesterol and high density lipoproteins were assessed by using Boehringer Mannheim kit method. The Analysis of Covariance (ANCOVA) was used to find out any significant improvement and difference was found between the yoga practice group and control group. It was concluded from the results of the study that the yogic practice has decreased the total cholesterol and also increased the high density lipoproteins significantly. It was also found that there was a significant difference was occurred between the yogic practice group and control group on selected criterion variables.

KEYWORDS: yogic practices, total cholesterol, high density lipoproteins, ANCOVA

INTRODUCTION

The word yoga is derived from the Sanskrit root yuj meaning to bind, join, attach and yoke, to direct and concentrate one's attention on, to use and apply. It also means union or communion.

According to Swami Satyanand Saraswathi "Yoga is not an ancient myth buried in oblivion. It is the most valuable inheritance of the present. It is the essential need of today and the culture of tomorrow".

The Sanskrit term *yoga* is most frequently interpreted as the "union" of the individual self (*jíva-átma*) with the supreme Self (*parama-átman*). The ancient definition is at home in Vedánta, the dominant branch of Hindu philosophy, which also greatly influenced the majority of Yoga schools. Vedánta proper originated with the ancient esoteric scripture known as the *Unpanishads*, which first taught the "inner ritual" of meditation upon, and absorption into, the unitary Ground of all existence. However, nondual hymns of the *Vedas*.

Diabetes mellitus is a group of metabolic diseases characterized by high blood sugar (glucose) levels, that result from defects in insulin secretion, or action, or both. Diabetes mellitus, commonly referred to as diabetes was first identified as a disease associated with "sweet urine," and excessive muscle loss in the ancient

world. Elevated levels of blood glucose (hyperglycemia) lead to spillage of glucose into the urine, hence the term sweet urine. Normally, blood glucose levels are tightly controlled by insulin, a hormone produced by the pancreas. Insulin lowers the blood glucose level. When the blood glucose elevates (for example, after eating food), insulin is released from the pancreas to normalize the glucose level.

Cholesterol is also a key precursor or intermediate compound in the production by the body of numerous biologically important substances, collectively called steroids. These include various essential hormones plus bile acids, the major excretory product of cholesterol metabolism but also important in dietary fat.

Lipids and sterols circulate, as a part of macromolecular complexes known as lipoprotein. Lipoproteins are divided by their ultra centrifugal properties into chylomicrons, very low-density lipoproteins (VLDL), and low-density lipoproteins (LDL) high-density lipoproteins (HDL).

METHODOLOGY

To achieve the purpose of the study 30 male diabetic patients in and around Pondicherry, Puducherry State was selected as subjects and their age ranged between 35 and 55 years. Subjects were selected at random by lot procedure. Group I underwent yogic practices (n = 15) and Group II acted as control (n = 15), which did not undergone any special training apart from their curricular activity. The yogic practice period for the present study was six days per week for twelve weeks. For every training programme there would be a change in various structure and systems in human body. So, the researchers consulted with the experts then selected the following variables as criterion variables: 1. Total cholesterol and 2. High density lipoproteins. The total cholesterol and high density lipoproteins were assessed by using Boehringer Manheim Kit method.

ANALYSIS OF THE DATA

The data collected prior to and after the yogic practice period on total cholesterol and high density lipoproteins on yoga practice group and control group were analysed and presented in the following Table - I.

Table – I

Analysis of Covariance and 'F' ratio for Total cholesterol and High density lipoproteins for Yoga Practice Group and Control Group

Variable Name	Group Name	Yoga Practice Group	Control Group	'F' Ratio
Total cholesterol (mg/dl)	**Pre-test Mean ± S.D**	193.13 ± 29.68	200.53 ± 32.029	0.431
	Post-test Mean ± S.D.	173.07 ± 23.27	208.47 ± 27.31	14.602*
	Adj. Post-test Mean	175.55	208.983	30.793*
High density lipoproteins	**Pre-test Mean ± S.D**	41.33 ± 5.851	37.20 ± 9.182	2.182
	Post-test Mean ± S.D.	47.40 ± 5.221	38.00 ± 8.392	13.57*

(mg/dl)	**Adj. Post-test Mean ± S.D.**	45.758	39.642	22.01*

* Significant at .05 level of confidence.
(The table values required for significance at .05 level of confidence with df 1 and 28 and 1 and 27 were 4.20 and 4.21 respectively).

Results

Before applying the experiment all the subjects of the yoga practice and control groups attended the pre-test, which was conducted a day prior to the commencement of the training and the data were collected on total cholesterol and high density lipoproteins. After twelve weeks of yogic practices the post-test was conducted one day after the training period to find out any changes in the criterion variables.

The analysis of covariance (ANCOVA) was used to find out the significant improvement and differences if any, for the yogic practices group and control group on selected criterion variables separately. In all the cases, .05 level of confidence was fixed to test the significance, which was considered as an appropriate.

After applying the analysis of covariance, the result of this study showed that there was a significant decrease on total cholesterol and a significant increase in high density lipoproteins after the yogic practice period. And the result of the study also shows that there was a significant difference exists among yogic practice group and control group in total cholesterol and high density lipoproteins after twelve weeks of training. Further, comparing the adjusted post-test means of all the criterion variables, such as, total cholesterol and high density lipoproteins, the yogic practice group was significantly decreased the total cholesterol and increased the high density lipoproteins after the training period, when compared with the control group. Basically the yoga practice has tremendously significantly altered the biochemical parameters.

Conclusions

The result of the present study also shows that there was a significant decrease in total cholesterol and a significant increase in high density lipoproteins after the twelve weeks of yogic practice among male diabetic patients.

Reference:

Swami Satyanand Saraswath, ***Asana Pranayama Mudra Bandha***, (Varanasi: Bharagava Bushan Press, 1999), p.1.

Georg Feuerstein, ***The Yoga Tradition: Its History, Literature, Philosophy and Practice***, (New Delhi: Elegant Printers, 2002), p.4.

Swami Vishnu Devananda, ***The Sivananda Companion to Yoga***, (New York: Fireside Book, Simon and Schuster, 2000), p. 10.

www.parmarth.com

www.wikipedia.org

www.minddisorders.com

www.yoga.org.nz