

Effect of the combination of Black seed and garlic on Hypercholesterolemia

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Introduction:-

Coronary heart diseases (CHD) have been a global problem since long. It prevails in high class society to lower class society and effect all ages specially the middle age group. The major cause of CHD is atherosclerosis with reference to major and minor etiological and pathological factors associated with atherosclerosis. Hyperlipidemic states especially hypercholesterolemia have been under consideration on a large scale. High level of serum LDL with positive and HDL with negative correlation pertaining to atherosclerosis have been found by many works. Diets containing monounsaturated fatty acids (MUFA) have been referred to decrease both serum LDL & HDL levels.

In Sri Lanka, *Nigella Sativa* is called “*KALUDURU*” which is used in most of the ayurveda preparations used in cerebro-vascular diseases. The useful part of *kaluduru* is the seeds extract contain essential oils, fatty acid, nutrients & moisture. Total oil contains saturated fatty acid 18% MUFA 23.8% & PUFA 58.1%. The major fatty acids are Myristic (0.5%), Palmitic (13.7%), Palmitoleic (0.1%), Stearic (2.6%), Oleic (23.7%), Linoleic (57.9%), Linolenic (0.2%) and Arachidic (1.3%). The *Allium sativum* is a herb know as *SUDULOONU / GARLIC*. The useful part is the bulb. Sanskrit documents record that use of garlic remedies approximately 5000years ago. Garlic is used for hypertension, atherosclerosis and hyperlipidemia.

Clinical research has revealed that oil of *Nigella sativa* has hypocholesterolemic effect on patients with hyperlipidemia. It is also reported that when it reduces the LDL, there is a tendency to reduce HDL also which is not expected in the treatment. Garlic has shown significant hypolipidemic effect with the increasing effect of HDL. Therefore the combination of these two drugs may show the more favorable effect on patients with hypercholesterolemia.

MATERIALS AND METHOD

Patients were selected from Ayurveda teaching hospital- Boralla and Ayurveda general hospital- Galle. Their serum cholesterol levels were checked consequently twice in two weeks. The patients who's serum cholesterol levels has been increased and stagnated were selected for the trials. Some of them were using allopathic medicine, but they were selected only if they were using those drugs for a period more than one year and still the serum cholesterol level has not been checked.

The experiment has been done over 10 month period from February 2005 to January 2006. Before start the experiment their Serum Lipid levels were checked {Total Cholesterol (TC), Tri Glyceride (TG), Low Density Lipoprotein (LDL) and High Density Lipoprotein (HDL)}. They were strictly advised not to increase or decrease the doses of other medicines which are been taken by them. They were given the modified GARLICHol Capsules which contain fresh oil of *Nigella sativa* and fresh juice of *Allium sativum* in therapeutic dose. Each patient treated with one capsule two times a day after meal with some water for a period of 30 days.

A performa was filled per each patient twice a month to see is their any side effect or unwanted effect. End of the treatment for one month again the serum lipid levels were checked.

RESULTS AND DISCUSSION

Nearly hundred of patients were directed to the clinic and 62 patients were selected for the trial. Only 47 patients were remained at the end of the trial and there were 11 males and 36 females. All the patients were between the ages of 40 and 80 years.

Table 1: Number of patient in different cholesterol levels

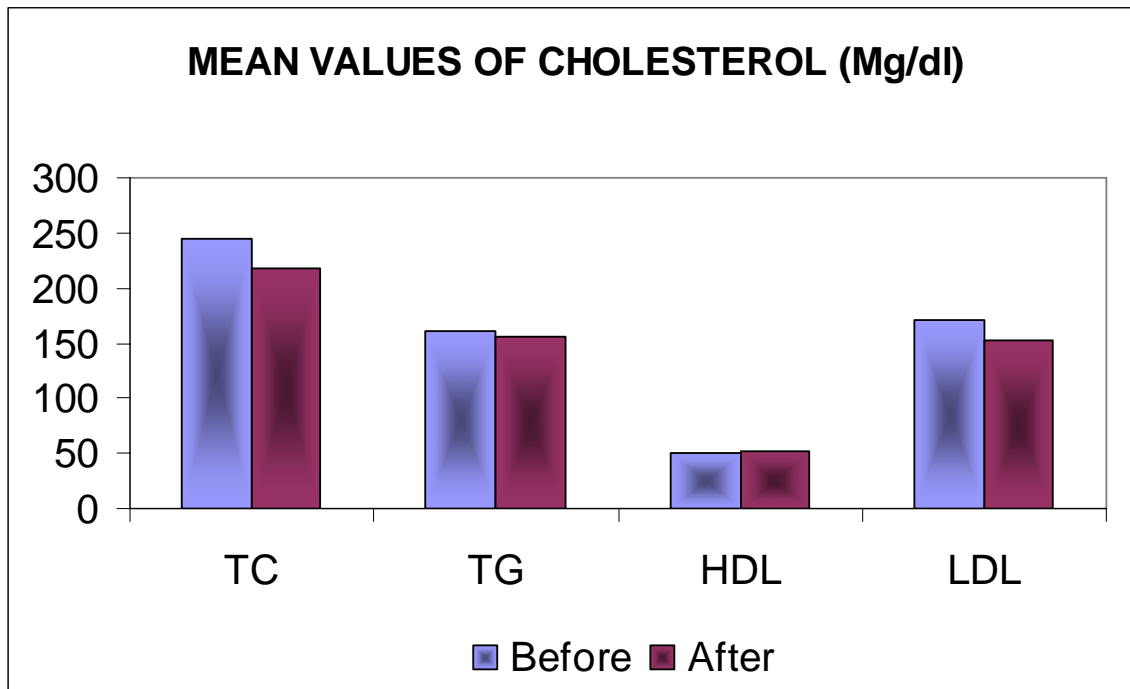
	Total Cholesterol level Range (mg/dl)	Before Treatment	After Treatment
1	120 - 160	00	05
2	160 – 200	04	14
3	200 – 240	17	04
4	240 – 280	19	13
5	280 - 320	07	01
	Total	47	47

It was found that the treatment of one month with Garlichol effectively reduced the serum cholesterol level in most of the patients except in 10 patients out of 47. The statistical analysis shows significant decrease of Total cholesterol and Low density lipoproteins. The serum HDL cholesterol level was increased.

Parameters	Before Treatment	After Treatment
TC (Mg/dl)	244.16 ± 35.53	217.39 ± 41.15 *
TG (Mg/dl)	160.24 ± 54.04	156.68 ± 45.56
HDL (Mg/dl)	49.86 ± 11.88	52.70 ± 15.44
LDL (Mg/dl)	171.2 ± 33.70	152.93 ± 39.28 **

* $p < 0.001$ as compared to the treatment value

** $p < 0.05$ as compared to the treatment value



These results suggest that Garlichol has a protective role in atherosclerosis due to its hypolipidemic action. Lowering of the Total cholesterol and LDL cholesterol will also reduce their ratio with HDL cholesterol, thus reducing the risk for coronary artery diseases. This could be an important step in the prevention and management of hypercholesterolemia.

This result has showed after the treatment only for one month. If the treatment was continued for longer period, more significant and favorable result may be achieved.

At the end of one month treatment Garlichol reduced the triglycerides level in most of the patients but the final mean values did not show a significant difference.

It is important to mention that these results were obtained from the patient whose cholesterol and triglyceride levels were stagnated even after the long term treatment with other drugs.

Conclusion :-

On the basis of these findings it is concluded that combination of the oil of *Nigella sativa* and garlic produce antiatherogenic effect by decreasing low density lipoproteins level.

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