

**GARLIC OIL (GARLIC PEARLS RANBAXY) IN  
HYPERLIPIDAEMIA SECONDARY TO  
DIABETES' MELLITUS**

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**Abstract**

The lipid lowering effect of Garlic Oil (Garlic Pearl Ranbaxy) in 40 diabetics with hyperlipidaemia was studied. Other causes of hyperlipidaemia such as hypothyroidism, renal diseases, alcoholism, pregnancy, ingestion of oral contraceptives etc. were sought for and excluded. The lipid lowering effect of Garlic Pearls in relation to (a) duration of treatment with Garlic Pearls and (b) the mode of antidiabetic treatment exhibited, was analysed.

Garlic Pearls were administered at a dose of two pearls thrice daily for a period 3, 6 and 12 months to 16, 8 and 16 patients respectively.

Triglyceride was lowered significantly in all the patients studied treated for 3 months; Cholesterol was, however, lowered significantly only in those treated for 3 months.

There was a mean fall in the cholesterol level of  $46.23 \pm 57.39$  mgm % in those on diet alone. This was greater than the mean fall of  $9 \text{ mgm \%} \pm 56.72$  mgm % in those treated with insulin. Diabetics treated with oral drugs showed paradoxically a mean rise of  $15.79 \pm 68.25$  mgm %.

Triglyceride was lowered in all diabetics studied. The mean fall was greatest in the diet alone group ( $206.69 \pm 111.71$ ), followed by the insulin treated group ( $98.33 \pm 131.21$  mgm %); the least fall was in diabetics treated with oral drugs.

Thus it is concluded the Garlic Pearls have a beneficial triglyceride lowering effect in diabetics.

**Materials and Methods**

Forty diabetics with hypercholesteralaemia (over 250 mgm %) and/or hypertriglyceridaemia (over 170 mgm %) were taken up for the study. 21 were males and 19 females. Other causes of hyperlipidaemia such as hypothyroidism, renal diseases, alcoholism, pregnancy, oral contraceptive therapy etc. were sought for and excluded. Garlic Pearls were administered at a dose of two pearls three times daily. Serum Cholesterol and triglycerides were estimated at monthly intervals. The study extended for 3, 6 and 12 months in 16, 8 and 16 patients respectively. The pre and post-treatment levels of

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cholesterol and triglyceride were compared and analysed using Student 't' test to determine the lipid-lowering effect of Garlic pearls.

## Results

### 1. The effect of Garlic Pearls on Serum Cholesterol in diabetics.

Garlic pearl therapy lowered the serum cholesterol ( $p < 0.01$ ) in the 16 patients treated for 3 months. However, it did not significantly influence the serum cholesterol level in patients treated for 6 months and 12 months (Table I).

**TABLE 1**  
**Effect of Garlic pearls on serum cholesterol in Diabetics**

Duration of therapy	No. of cases	Before Mean	Therapy Range	After Mean	Therapy Range	Statistical significance
3 months	16	285.94 ± 44.80	200-350	251.69 ± 32.12	175-300	<0.01
6 months	8	259.25 ± 68.90	124-320	264.75 ± 52.70	178-340	N.S.
12 months	16	272.31 ± 71.85	148-400	274.25 ± 48.53	200-360	N.S.

Further, an attempt at correlation between the effect of Garlic pearls on Serum Cholesterol and the type of antidiabetic therapy exhibited, a mean fall of  $46.23 \pm 57.39$  mgm % in those of diet alone. This was greater than the mean fall of  $9 \pm 56.72$  mgm % in those treated with insulin. Diabetics treated with oral drugs showed, paradoxically, a mean rise of  $15.79 \pm 68.25$  mgm % (Table 2). An inter-group analysis shows that the effect of garlic pearls between the diet alone group and OHA treated group is significant ( $P > 0.01$ ). There is no statistical significance between the diet alone group and insulin-treated group as well as insulin treated group and OHA treated group.

### The effect of Garlic Pearl on triglyceride level in Diabetics

Garlic pearl therapy significantly lowered the triglyceride levels in all the three groups of patients studied.  $P < 0.01$  in those treated for three months;  $P < 0.001$  in those treated for six months and  $P$  more than 0.02 in those treated for 12 months (Table 3). Thus the triglyceride lowering effect of Garlic pearls was uniform and sustained.

**TABLE 2**  
**Effect of Garlic Pearls on serum cholesterol level in relation to the mode of anti-diabetic therapy**

Mode of anti diabetic therapy	No. of cases	Difference between the pre and post-treatment serum cholesterol levels in mgm %	Statistical significance
Diet alone	13	-46.23 ± 57.39	N.S. 0.046
Diet + Insulin	8	- 9.00 ± 56.72	
Diet + OHA	19	+ 15.79 ± 68.25	N.S. 0.01

N.S. = Not Significant.

**TABLE 3**  
**Effect of Garlic Pearls on Triglyceride level in diabetics**

Duration of therapy	No. of cases	TRIGLYCERIDE				Statistical significance
		Before mean	Therapy range	After mean	Therapy range	
3 months	16	280.81 ± 139.79	70-723	161.13 ± 106.01	60-480	<0.001
6 months	8	270.62 ± 46.78	220-360	129.00 ± 106.30	52-380	P <0.001
12 months	16	354.63 ± 237.19	180-1000	232.38 ± 146.61	58-540	P <0.02

Further, an attempt at correlation between the effect of Garlic pearls on Serum triglyceride and the type of antidiabetic thereby exhibited, a mean fall of  $206.69 \pm 111.71$  mgm% in those treated with diet alone. This was greater than the mean fall of  $98.38 \pm 13.21$  mgm% in the insulin treated group and  $86.32 \pm 157.27$  mgm% in the OHA treated group. An intergroup analysis did not however show the difference to be of any statistical significance.

**TABLE-4****Effect of Garlic pearls on serum triglycerides level in relation to the mode of anti-diabetic therapy**

Mode of anti-diabetic therapy	No. of cases	Fall in TG level in mgm%	Statistical significance
Diet alone	13	206.69 ± 111.71	NS
Diet + Insulin	8	98.38 ± 131.21	NS
Diet + OHA	19	86.32 ± 157.27	NS

**Discussion**

Hyperlipidaemia is a common accompaniment of diabetes mellitus. Hypercholesterolaemia is implicated in the causation of atherosclerosis and coronary heart disease. Though several studies have shown that an elevation of plasma triglyceride is common in patients with coronary artery heart disease, not all authorities are agreed on this. Is there any difference between the atherosclerosis of diabetics and non diabetics? In the words of Sanaten et al<sup>1</sup> 'Hypertriglyceridemia may have a greater impact on vascular disease in diabetic than in non-diabetic patients and that diabetic patients with atherosclerosis could be distinguished from those without atherosclerosis more reliably by triglyceride levels than by cholesterol levels'.

The frequent occurrence of hypertriglyceridaemia in diabetics is not surprising in view of the known influence of insulin on triglyceride kinetics. It is well known that coronary artery heart disease is commoner in diabetics than nondiabetics. Apart from hyperglycaemia itself as a risk factor, perhaps hypertriglyceridaemia increases the risk further as shown in one of our studies<sup>2</sup> of 'Exercise testing in Asymptomatic male diabetics in which a significant (P<0.001) positive correlation between hypertriglyceridaemia and occult coronary heart disease was noted. Again, Carleon, Bottiger and Ahfeldt<sup>3</sup> have reported a 14 year follow up study focusing on the role of plasma TG and cholesterol in which they have found that elevated plasma triglyceride were a greater predictor of risk of coronary heart disease than high cholesterol alone.

Thus the triglyceride lowering effect of pearls in the diabetics assumes great significance in view of the common occurrence of hypertriglyceridaemia in diabetics and its positive correlation to the development of coronary artery heart disease in diabetics.

**Conclusion**

It is concluded that garlic pearls have a significant and sustained triglyceride lowering effect in diabetics. This assumes significance in the light of observations that hypertriglyceridaemia increases the risk of coronary artery heart disease in diabetics independent of cholesterol and other risk factors.

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