THE EFFECT OF LIPOCARE ON MARKERS OF DYSLIPIDAEMIA IN MILD HYPERCHOLESTEROLEMIC HUMANS

MIJI.T.V, SURYA SUKUMAR , SOUMYA.P.S, UMA.C★

DEPARTMENT OF BIO CHEMISTRY
KARPAGAM UNIVERSITY
COIMBATORE, INDIA

★ Corresponding Author
Ph : 9842036387
Fax: 0422-2611043
Email :umaradhakrishnan29@gmail.com

Summary

The present study was undertaken for evaluating the hypolipidemic effects of an ayurvedic medicine 'Lipocare' containing Allium sativum, Murraya koeinigii , Piper longum , Zingiber officinale , Plumbago indica ,Terminalia bellerica, Terminalia chebula , Phyllanthus emblica and Piper branchystachyum in mild hypercholesterolemic humans over a period of 2 months. A total of 15 patients with established mild hypercholesterolemia were studied. The ongoing medications were stopped under medical supervision and the patients were provided with Lipocare tablets (dose-2 tablets each weighing 750 mg). The ayurvedic medicine 'Lipocare' has showed significant hypolipidemic effect and thus reducing heart disease. The nutraceuticals present in the drug like alkaloids , flavanoids and tannins are responsible for the medical effects.

Key words: Lipocare, Tannis, Hypercholesteremia, Dylipidemia**.**

Introduction

Dyslipidaemia is a metabolic condition associated with abnominal obesity ; hypertension ; insulin resistance (glucose intolerance). Prothrombolic conditions and the presence of pro-inflammatory factors even through this later conditions may be at a low level. It presents different forms whose common denominator is the alteration of lipid metabolism; manifested by changes in lipids and lipoproteins in blood. A generalized pro-inflammatory condition is presently recognized to be the precursor for artherosclerosis (13), vascular and cardiovascular disease (6).

Dyslipidaemia is a term used to denote raised serum levels of cholesterol or triglycerides or both or reduced HDL cholesterol. It was defined when any of the lipid fractions was changed; ie serum cholesterol > 200 mg%; HDL cholesterol < 40mg% ; LDL cholesterol > 100mg%; serum triglycerides > 150mg% (15).

Materials and methods

Subjects

A total of 15 patients with established dyslipidaemia as adjudged from clinical features appeared for the camp (Age group 35=55 years). An informed consent for the study was obtained from each patient. The clinical performa was given to each patient to collect data such as height, weight, diet pattern, previous history of illness etc. the patients suffering from congestive disorders like vascular heart disease , congestive cardiac failure , diabetes, renal and liver disorder and those consuming regular drugs were excluded from the study. The patients having total cholesterol level 190-310 mg/d/ were selected for the study. The dosage of the drug was decided by the supervising medical officer on a case to case, taking note of the clinical conditions and responsiveness of the patients. The patients were advised to follow their usual food habits and take Lipocare 750 mg 2 tablets at bed time along with a glass of water. The patients were monitored for 2 months.

Specimen collection:-

Fasting blood was collected from 15 patients at panchakarma hospital , Oushadi, Thrissur and serum of each sample was analysed from time to time in Medivision lab, Thrissur. Dr.Rajithan looked after the welfare of these patients arranged their periodical checking and blood analysis.

Biochemical analysis

Different biochemical analysis are given below. Methodology adopted is also given against each test. In lipid profile

Total cholesterol (CHUP-PAP method)
Triglycerides (GPO-PAP-ESPAS)
HDL (Accelerator selective Detergent Method)
LDL (Homogenous enzymatic colorimetric assay).
Blood glucose (GOP-POAP Method).

In cardiac function tests:

SGOT,SGPT	(UV, Kinetic assay)
CRP, CKMB	(RIA Method)
Toponin T	(ELISA method)
LDH	(Spectro photometric method)
rGGT	(Spectro photometric method)

In Kidney function tests :

Urea	(DAM method)
Creatinine	(Jaffe's method)
Uric Acid	(phosphotungstic method)

In Thyroid function tests :
T3, T4, TSH were estimated by RIA method .

Phytochemical Analysis :
Phytochemical screening was done for analyzing secondary metabolites that are responsible for curing ailments.

HPTLC Analysis :
HPTLC analysis was also done. It is an invaluable quality assessment tool for the evaluation of botanical material.

Results

Table 1: Pretreatment and post treatment values of blood sugar and Lipid profile in patients of mild hypercholesterolemia

Biochemical Parameter (mgldl)	Pre-Treatment Mean±Sd	Post Treatment Mean±Sd	tValue.
FBS	83.4 ± 23.5	87.9 ± 18.7	2.217★★
PPBS	110.9 ± 38.22	113.93 ± 37	0.910NS
Cholesterol	59.1 ± 66.6	41.6 ± 38.2	3.3★★
TG	58.3 ± 71	30.2 ± 35.1	3★★
HDL	14.8 ± 14.9	74 ± 17.1	3.7 ★★
LDL	68.1 ± 76.2	49.2 ± 66	3★★
VLDL	11.9 ± 14.3	6.3 ± 7.3	3.3★★

★★ : Significance at 0.01 level.
ns★ : non significance at 0.05 level.

Results of paired – test for comparing the parameters of glucose test shows that t-value for FBS is significant at 5 percent level. This shows that there is significant difference in FBS value after test. Mean value of FBS before treatment is 83.37 which are increased to 87.90 after test. About 5 percent increase was noted in FBS value. But ± value for PPBS is found to no significant change in the PPBS value after treatment. Though there is significant increase in FBS value it is still normal range.

From the result of the table t-value of TGL,HDL,LDL,VLDL are also found to be significant .

Mean values after treatment shows that TGL,LDL,VLDL value decreased after treatment and the HDL value increases .

Table 2: Pre-treatment and post-treatment value of cardiac profile, Thyroid profile and kidney profile in patients of mild hypercholesterolemia.

Biochemical parameter	Pre-treatment mean±sd	Post-treatment mean± sd	t-value
CRP (mg/L)	12 ± 16.3	6.8 ± 8.7	3.1★★
SGOT (IU/L)	6.06 ± 6.57	4 ± 4.57	3.45★★
SGPT (IU/L)	1.93 ± 4.42	3.06 ± 1.56	1.63ns
r GGT(U/L)	0.3 ± 1.45	1.2 ± 1.9.4	1.4.57ns
LDH(U/L)	1.06 ± 3.17	0.8 ± 1.1	1.25ns
CKMB(U/L)	0.5 ± 0.75	0.23 ± 0.56	1.54ns
Troponin – T (mg.ml)	13± 1.1	0.6 ± 0.54	0.04ns
T3 (ng/dl)	0.40 ± 0.65	0.23 ± 0.56	1.54ns
T4 (mg/dl)	0.226 ± 0.507	0.886 ± 5.97	0.5 ns
TSH (mui/mi)	0.16 ± 0.256	0.053 ± 0.12	0.47ns
Urea (mg/dl)	2.46 ± 3.61	0.13 ± 0.52	0.94ns
Creatinine (mg/dl)	0.14 ± 0.34	0.04 ± 0.19	0.759 ns
Uric Acid (mg/dl)	0.27 ± 0.47	0.113 ± 0.23	1.86ns

★★ : Significance at 0.01 level

ns : Non significance of 0.05 level

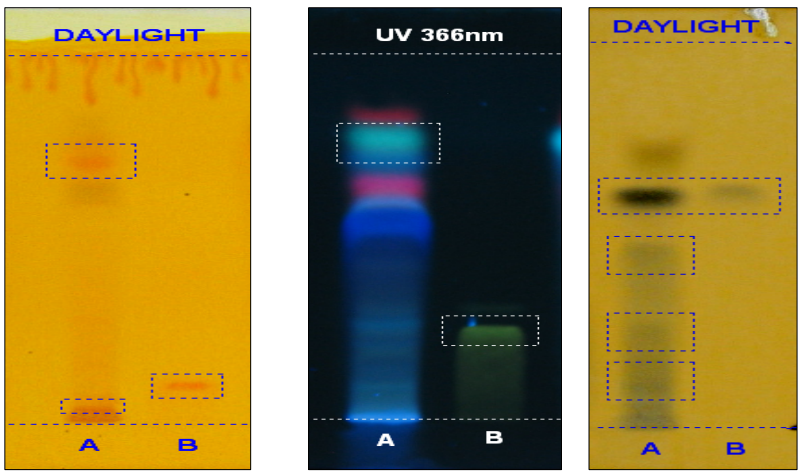
From the result of the table t-value of CRP ,SGOT, found to be significant at 0.01 level and t-value for SGPT: r GGT, LDH, CKMB, Tropon.T, T3,T4,TSH,Urea, creatinine, Uric Acid are found to be significant at 0.05 level.

HPTLC ANALYSIS

HPTLC Analysis of Drug Lipocare confirmed the presence of Alkaloid, Flavanoid and Tannin.

After Derivatization

A **B** **C**



ALKALOID **FLAVONOID** **TANNIN**

Discussion

Increased plasma Lipid levels ; mainly total cholesterol (TC) triglycerides (TG) and low density lipoproteins (LDL) along with decrease in high density lipoproteins are known to cause hyperlipidaemia. Therefore prime consideration in therapy for hyperlipidaemia and arteriosclerosis is to enervate the elevated plasma levels of TC , TG and LDL along with increase in HDL lipid levels (4,12,17).

The present study was aimed to assess the effect of Herbal drug LIPOCARE on Lipid abnormalities on cardiac enzymes, kidney function , and thyroid function. After 2 months of administration of Lipocare Drug in mild hypercholesterolemic patients , total cholesterol, TGL, LDL, VLDL values were decreased after treatment and the HDL value was increased showed in (table 2).

Lipid abnormalities form an important risk for Ischemic Heart Disease (8).HDL increase is known to reduce cardiovascular morbidity and mortality (2, 3, 9, 16).

Mean values after treatment shows that for CRP and for SGOT the value decreased after treatment. But no significant difference was noted in the case of SGPT, r GGT, LDH, CKMB, Troponin T, T2, T4, TSH, Urea, creatinine , Uric Acid after treatment showed in (table 2).

The herbal drug 'Lipocare' does not affect thyroid , kidney functions. It only lowers lipid abnormalities and cardiac enzymes CRP, SGOT. Thus the drug reduces cardiovascular problems also.

Previous studies have shown that diabetic, hypercholesteromic patients treated with Amilamax, reduces CRP (5). CRP of Drug 'Rajanyamalacadi' lowers the Lipid profile and SGOT (7).

The ingredients of the drug contain various nutraceuticals: they are all endowed with biological effects such as anti inflammatory, antioxidant and hypolipidemic properties. Mechanism of action of the neutraceuticals present in the components of the drug as suggested by various workers (10, 11, 14, 18). The drug LIPOCARE on HPTLC analysis showed the presence of alkaloids, flavanoids and Tannins (19, 21). HPTLC analysis result was shown in figure A,B,C.

On the basis of results obtained in the present study: it can be concluded that Lipocare drug has antilipidemic activity , anti inflammatory activity and reduces heart disease.

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