



Management of dyslipidemia: a case study

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ABSTRACT

Dyslipidemia is one of the major pathological conditions. Most people will have no symptoms but having hyperlipidemia increase risk of developing fatty liver, cardiovascular disease and many other diseases. Sanitary life style and bad food habit plays important role to form unsaturated fat and at last raised lipid profile. We can refer dyslipidemia with *Medovaha Srotodushti* in Ayurvedic context. Plant sterols are very good sources that inhibit storage of unsaturated fat in our body. Curry leaf (*Murraya koenigii*) is a very common plant which is used in every house hold. Antilipidemic activity of this plant has already proved in various researches. The main objective of this study is management of dyslipidemia with curry leaf in a single case study.

Keywords: Dyslipidemia, *Medovaha Srotodushti*, Unsaturated fat.

INTRODUCTION

An increase level of plasma triglycerides, cholesterol, very low density lipoprotein, VLDL and decrease level of high density lipoprotein level in Hyperlipidemic condition. In *Ayurveda* our Acharya has described *Meda Dhatu Kshaya-Vridhhi*, *Srotodushti Hetu*, *Laskshana* and *Chikitsa*. Acharya charaka mentioned *avyayama* (lack of exercise), *Divasvapana* (daytime sleep), excessive fatty diet and alcohol intake. *Medovaha Srotodushti Lakshana Swedagaman* (excessive

sweating), *Snigdhta* (shiny skin) *Talushosh* (dryness of mouth), *Sthoulyta* (weight gain), *Shopha* (swelling) and *Pipasa* (excessive thirst). These description has similarity with the hyperlipidemia. This is one of the major risk factor which leads to atherosclerosis and other cardiovascular diseases. Liver is key organ for fat and lipid metabolism, absorption and storage, that why there is direct connection of liver diseases and hyperlipidemia. A highly saturated fat diet increases blood cholesterol concentration 15 to 25

per cent. This results from increased fat deposition in the liver, which then provides increased quantities of acetyl-CoA in the liver cells for the production of cholesterol. These leads to fatty liver diseases. There is also relation in oxidative stress and hyperlipidemia. Oxidative stress increase production of free radicals, which modified low density lipoprotein. This modification leads to significant changes in progression of various diseases. Keeping these both *Ayurveda* and modern view we selected *Murraya koenigii* (curry leaf) which is easily available and grossly used in every household for the single drug management of hyperlipidemia. This plant have an excellent antioxidant properties along with rich in iron and vitamins. Various experimental studies has already proved that *Murraya koenigii* shows antihyperlipidemic effect.

CASE DETAIL

40 year old woman married to 45 years old businessmen from bajnath has complain of increase of belly fat, loss of appetite, weight gain and tiredness since 6 months. Due to these complaints she was lacking her day today housework and her complaints were increasing with time. She have done lots of treatment for these complaints but had no satisfactory relief. So with these complaints she came to our hospital to pursue *Ayurvedic* treatment for the same complaints.

OBSERVATIONS AND RESULTS

Assessment of Clinical Signs and Symptoms

Symptoms	B.T.	F.U. 1	F.U.2
Weight	76 kg	74 kg	70 kg
Belly fat	92cms	90cms	86cms
Loss of appetite	Present	improved	improved
Lethargic	Present	Mild improvement	absent

B.T.- Before treatment, F.U.1- Follow up in 45 days, F.U.2 – Follow up in 90 days

Assessment of Lipid Profile

Parameter	B.T. (mg/dl)	F.U. 1 (mg/dl)	F.U. 2(mg/dl)
Cholesterol	382	264	190
Triglyceride	300	210	175
VLDL	60	42	35
HDL	76	52	38
LDL	246	170	117

PHYSICAL EXAMINATION AND INITIAL INVESTIGATIONS

Physical Examination

Blood Pressure -130/90 mmHg
 Heart Rate -78/min
 Height -162 cm
 Weight -80 kg
 BMI – 30.84
 Laboratory Evaluation:
 Total Cholesterol Level
 Triglycerides
 Very Low Density Lipoprotein (VLDL)
 Low Density Lipoprotein (LDL)
 High Density Lipoprotein (HDL)
 Fasting Blood Sugar - mg/dL
 Post parindal Blood Sugar (pp)- mg/Dl

Past History: No history of diabetic, hypertension, and any other chronic illness.

Ayurvedic management

1. Patient has given *Murraya koniegii* leaf powder 3 gm with Luke warm water on empty stomach in morning.
2. Along with these patient has advised to stop the all junk food and oily food.
3. Mild exercise and morning walk is also suggested.

Other Biochemical parameter

Blood test	B.T.	F.U.1	F.U.2
Hb%	10.4 gm%	10.6%	10.8%
SGOT	26 IU/L	25IU/L	24IU/L
SGPT	32IU/L	30IU/L	28IU/L
Urea	22 mg/dl	24IU/L	25IU/L
Creatinine	0.8 mg/dl	0.6mg/dl	0.6mg/dl
FBS	107 mg/dl	106mg/dl	102mg/dl

DISCUSSION

In the pathogenesis of hyperlipidemia sluggish liver is key factor. That's why for the treatment of hyperlipidemia it is necessary to select which has hepatic stimulant action also. We found marked changes in subjective and objective parameters of patient in two follow up. There is also improvement in liver function test and hemoglobin value. *Murraya koenigii* has alkaloids koenine, girinimbiol, caumarin, glucosides, calcium, iron, vitamin c and oxalic acid. Because of these compositions it has anti oxidant activity. It is also rich in β -sitosterol which is a phytosterol. These plant sterols in the diet modulate cholesterol absorption. Since they are structurally similar to cholesterol, they block absorption of cholesterol in

the intestine that ultimately helps to reduce low density lipoprotein levels.

CONCLUSION

After this study we can conclude that *Murraya koenigii* has hyperlipidemic effect. This aromatic plant is easily available so it is cost effective and every one can use this. Along with these medicinal prosperities it is rich in iron, calcium and vitamin. Therefore regular intake of this will prevent many nutritional deficiencies. Further trials are required in large number of sample to validate this study. This plant can become a very good source of curative and preventive treatment of hyperlipidemia and their subsequent diseases.

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