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Case Study

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A CASE STUDY ON THE MANAGEMENT OF DYSLIPIDEMIA (MEDOROGA) THROUGH AYURVEDIC INTERVENTION

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ABSTRACT

Background: Dyslipidemia refers to abnormal levels of lipids in the blood and is recognized as a key contributor to atherosclerotic cardiovascular disease. The global Burden of disease study has estimated that death rates from coronary artery disease increasing in India. The prevalence of Dyslipidemia is 79% in Indian population. The most frequently observed forms of dyslipidemia in India include borderline elevated LDL cholesterol, reduced HDL cholesterol levels, and increased triglyceride concentrations. In modern medicines, the lipid lowering agents like statin are mostly used by the patients. In *Ayurveda*, dyslipidemia can be correlated with *Medoroga*. which results from the imbalance of *Meda Dhatu* (adipose tissue) and is categorized under *Santarpanajanya Vyadhi*. These two conditions exhibit notable parallels in their causes, underlying mechanisms, clinical manifestations, and potential complications. **Materials and Methods:** This single case study was conducted on a 47-years-old male patient attended the Shalya Tantra OPD with complaints of heaviness in body, lethargy, increased body weight and dyspnea on exertion. The diagnosis of dyslipidemia was confirmed through lipid profile investigation. The patient was managed with *Arjunaghanvati, Triphala Guggulu* and *Punarnava mandoora* for a duration of 4 months, along with appropriate dietary and lifestyle modifications. Assessment was carried out by comparing pre-treatment and post-treatment lipid profile parameters, including total cholesterol, Triglycerides, LDL alongwith reduction in body weight (from 118 kg to 105 kg) and improvement in symptoms. **Results:** Post-treatment lipid profile reports showed a significant reduction in Total Cholesterol, Triglycerides, and LDL levels. Additionally, the patient exhibited a reduction in body weight alongwith improvement in symptoms. **Conclusion:** The present case study demonstrates that *Ayurvedic* management is effective in improving lipid profile parameters in dyslipidemia (*Medoroga*). The findings suggest that early intervention through *Ayurveda* can help in correcting lipid imbalance and may reduce the risk of future cardiovascular complications.

KEYWORDS: *Medoroga*, Dyslipdemia**,** *Arjunaghanvati, Triphala Guggulu, Punarnava mandoora.*

INTRODUCTION

Dyslipidemia refers to an abnormality in lipoprotein metabolism, characterized by either overproduction or deficiency of lipoproteins, or both. It is typically manifested by elevated levels of total cholesterol (TC), low-density lipoprotein cholesterol (LDL-C), and triglycerides (TG), along with reduced levels of high-density lipoprotein cholesterol (HDL-C) in the bloodstream.[1] According to the International Classification of Diseases (ICD-11), the code 5 CBZ is assigned to unspecified disorders of lipoprotein metabolism. Dyslipidemia is closely linked with the pathogenesis of cardiovascular diseases and is recognized as a major independent risk factor for coronary artery disease (CAD). It significantly contributes to the development of atherosclerosis and related cardiovascular events.[2] In India, the prevalence of dyslipidemia is estimated to be around 25–30% in urban populations and 15–20% in rural populations.[3]

Conventional pharmacological management of dyslipidemia includes the use of statins, cholesterol absorption inhibitors, bile acid sequestrants, fibrates, and nicotinic acid. However, long-term use of these

medications is often associated with adverse effects such as myalgia, arthralgia, dyspepsia, and hepatic as well as renal toxicity.[4]

Dyslipidemia is not directly mentioned in *Ayurvedic* texts but the concept of vitiated *meda* which is *baddha* and *AbaddhaMeda*[5] mentioned by *Acharya Chakrapani* have similarity with the condition of dyslipidemia describe in contemporary science.

Medoroga arises due to the vitiation and excessive accumulation (*vriddhi*) of *Meda Dhatu*.[6,7] This leads to abnormalities such as *bahutwa* (excessiveness) and *abaddhatwa* (improper binding) of *poshaka medodhatu*.[8]

Considering the rising prevalence of dyslipidemia and the limitations of modern pharmacotherapy, there is a growing need to explore safer, effective, and economical treatment options. So, here in this study *Arjunaghanvati*, *Triphala Guggulu*, *Punarnava mandoora* was given which was cost effective and easily available.

CASE REPORT

PARTICULARS OF THE PATIENT

Patient Name – XYZ Religion - Hindu
Sex - Male Marital status - Married
Age - 47 years Occupation- Businessman

CHIEF COMPLAINTS

- Heaviness in body
- Lethargy
- Increased body weight
- Dyspnea on exertion

HISTORY OF PRESENT ILLNESS

A 47-years-old male patient presented to the OPD of Shalya Tanta, Gurukul Campus, Uttarakhand, Ayurved University, Haridwar with the complaints of heaviness in the body, lethargy, dyspnea on exertion and progressive weight gain for the past 3 months. The symptoms were gradual in onset and progressive in nature. The patient had a sedentary lifestyle and irregular dietary habits. The patient had previously taken treatment from a nearby hospital but he did not experience significant relief, following which the patient presented to our hospital for further management.

PAST HISTORY

K/C/O – HTN since 10 years, on regular treatment
N/H/O – DM II, Thyroid disorder

TREATMENT HISTORY

- **Conservative –** Patient has taken treatment from nearby hospital
- **Surgical history –** Not Any

FAMILY HISTORY

No such family history was noticed.

PERSONAL HISTORY

Diet – Mixed
Appetite – normal
Sleep – sound
Bowels – Normal (two times a day)
Micturition – Normal (3-4 times/ day)
Habits – Tea (2-3 cups/ day)
Addiction – None

GENERAL EXAMINATION

- Patient was conscious and well oriented to person, place and time.
- Pallor, icterus – Not seen.
- Pulse rate – 82/min.
- Blood pressure – 130/80 mm/Hg.
- Temperature – 98.6 ^{0}F.
- Respiratory rate – 18/min.
- SPO_2 – 99% at room air.
- Height – 170 cm
- Weight – 118 kg.
- BMI – 40.8

INVESTIGATIONS

Table 1: Investigations Before Treatment.

Fasting lipid profile	Mg/dl
Triglycerides	1064.0
Total cholesterol level	242.0
High density lipoprotein	29.0
Very low-density lipoprotein	212.8

DIAGNOSIS

Dyslipidemia

THERAPUETIC INTERVATION

A comprehensive evaluation of the case has been conducted and an Ayurvedic management approach has been recommended. It is essential to highlight that dietary and lifestyle modifications are crucial components in the effective management of dyslipidemia**.**

Table 2: Therapeutic intervention.

Drugs	Dose	Duration
Arjunaghanvati	2 BID	4 Months
Triphala Guggulu	2 BID	4 Months
Punarnava mandoora	2 BID	4 Months

Specific Pathya

- Chapati prepared from flour of *yava*[9] on alternate days, *yava* daliya and multigrain daliya.
- Dinner was advised to be taken early, between 6-7 pm.

General *Pathya Ahara-Vihara*/lifestyle measures

- Food should be consumed only when hungry, divided into three meals per day.
- The diet should include green vegetables, *Takra*, and garlic (*Lashuna*).[10]

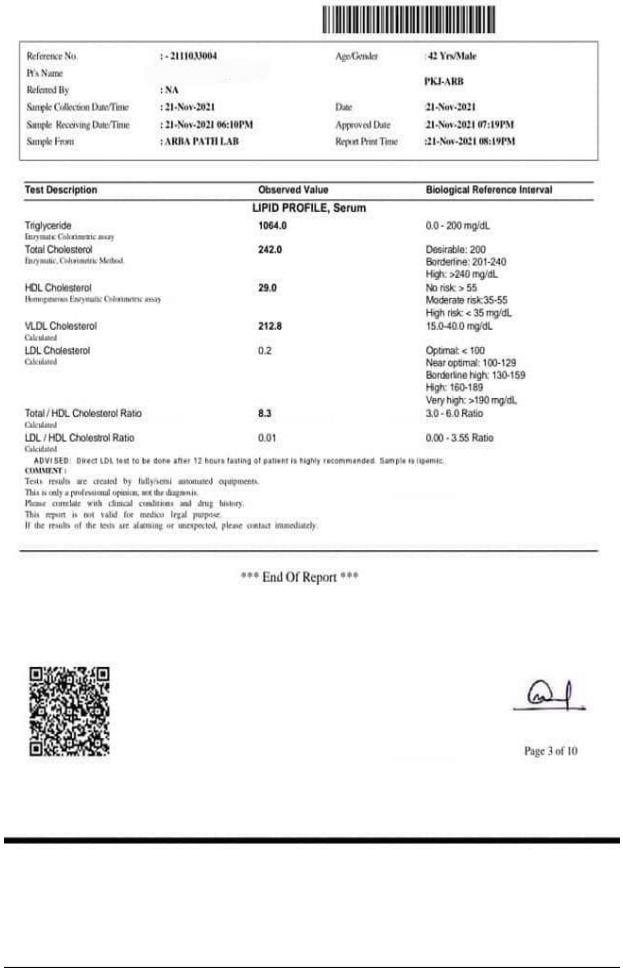
- Regular physical activity was encouraged, including a daily 3 km walk.
- The patient was also advised to practice *Surya Namaskar* and *Kapalbhati* in the morning, along with 30 minutes of cycling each day.
- Excessive intake of oily and fried foods, as well as items high in sugar, should be avoided.
- A non-vegetarian diet and daytime
- sleeping was also discouraged.

***Apathya*/avoidable lifestyle measures[11]**

OBSERVATIONS AND RESULTS

Table 3: Assessment of Lipid Profile.

Fasting lipid profile parameters	B.T. (mg/dl)	A.T. (mg/dl)
Triglycerides	1064.0	295
Total cholesterol level	242.0	154
High density lipoprotein	29.0	28
Very low-density lipoprotein	212.8	59



Reference No. : - 2111033004 Age/Gender :42 Yrs/Male
Pt's Name PKJ-ARB
Referred By : NA
Sample Collection Date/Time : 21-Nov-2021 Date 21-Nov-2021
Sample Receiving Date/Time : 21-Nov-2021 06:10PM Approved Date :21-Nov-2021 07:19PM
Sample From : ARBA PATH LAB Report Print Time :21-Nov-2021 08:19PM

Test Description	Observed Value	Biological Reference Interval
LIPID PROFILE, Serum		
Triglyceride (Enzymatic Colorimetric assay)	1064.0	0.0 - 200 mg/dL
Total Cholesterol (Enzymatic, Colorimetric Method.)	242.0	Desirable: 200 Borderline: 201-240 High: >240 mg/dL
HDL Cholesterol (Homogeneous Enzymatic Colorimetric assay)	29.0	No risk: > 55 Moderate risk:35-55 High risk: < 35 mg/dL
VLDL Cholesterol (Calculated)	212.8	15.0-40.0 mg/dL
LDL Cholesterol (Calculated)	0.2	Optimal: < 100 Near optimal: 100-129 Borderline high: 130-159 High: 160-189 Very high: >190 mg/dL
Total / HDL Cholesterol Ratio (Calculated)	8.3	3.0 - 6.0 Ratio
LDL / HDL Cholestrol Ratio (Calculated)	0.01	0.00 - 3.55 Ratio

ADVISED : Direct LDL test to be done after 12 hours fasting of patient is highly recommended. Sample is lipemic.
COMMENT :
Tests results are created by fully/semi automated equipments.
This is only a professional opinion, not the diagnosis.
Please correlate with clinical conditions and drug history.
This report is not valid for medico legal purpose.
If the results of the tests are alarming or unexpected, please contact immediately.

*** End Of Report ***

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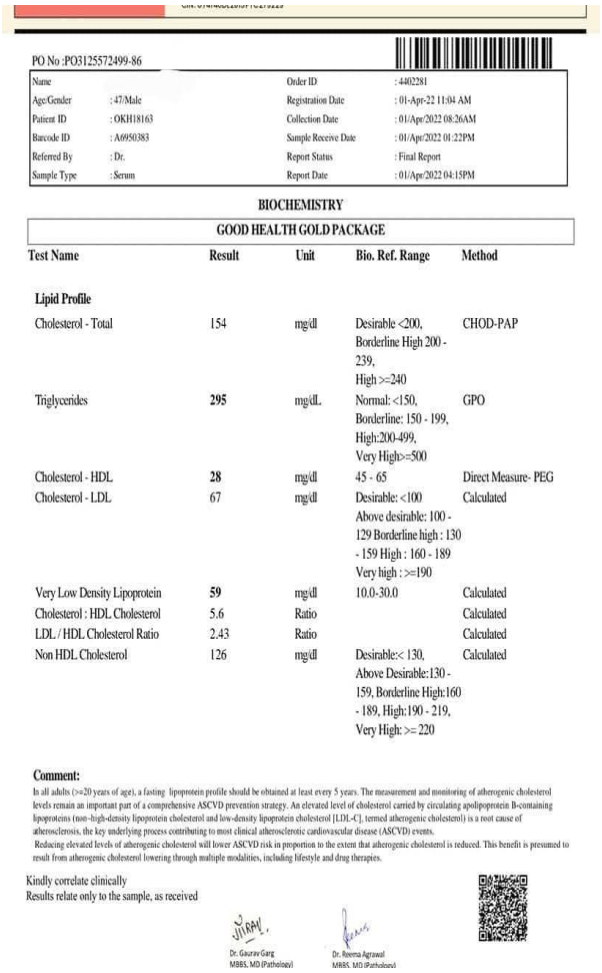
Fig 1: Before Treatment.



PO No :PO3125572499-86

Name Order ID : 4402281
Age/Gender : 47/Male Registration Date : 01-Apr-22 11:04 AM
Patient ID : OKH18163 Collection Date : 01/Apr/2022 08:26AM
Barcode ID : A6950383 Sample Receive Date : 01/Apr/2022 01:22PM
Referred By : Dr. Report Status : Final Report
Sample Type : Serum Report Date : 01/Apr/2022 04:15PM

BIOCHEMISTRY

GOOD HEALTH GOLD PACKAGE

Test Name	Result	Unit	Bio. Ref. Range	Method
Lipid Profile				
Cholesterol - Total	154	mg/dl	Desirable <200, Borderline High 200 - 239, High >=240	CHOD-PAP
Triglycerides	295	mg/dL	Normal: <150, Borderline: 150 - 199, High:200-499, Very High>=500	GPO
Cholesterol - HDL	28	mg/dl	45 - 65	Direct Measure- PEG
Cholesterol - LDL	67	mg/dl	Desirable: <100 Above desirable: 100 - 129 Borderline high : 130 - 159 High : 160 - 189 Very high : >=190	Calculated
Very Low Density Lipoprotein	59	mg/dl	10.0-30.0	Calculated
Cholesterol : HDL Cholesterol	5.6	Ratio		Calculated
LDL / HDL Cholesterol Ratio	2.43	Ratio		Calculated
Non HDL Cholesterol	126	mg/dl	Desirable:< 130, Above Desirable:130 - 159, Borderline High:160 - 189, High:190 - 219, Very High: >= 220	Calculated

Comment:
In all adults (>=20 years of age), a fasting lipoprotein profile should be obtained at least every 5 years. The measurement and monitoring of atherogenic cholesterol levels remain an important part of a comprehensive ASCVD prevention strategy. An elevated level of cholesterol carried by circulating apolipoprotein B-containing lipoproteins (non-high-density lipoprotein cholesterol and low-density lipoprotein cholesterol [LDL-C], termed atherogenic cholesterol) is a root cause of atherosclerosis, the key underlying process contributing to most clinical atherosclerotic cardiovascular disease (ASCVD) events.
Reducing elevated levels of atherogenic cholesterol will lower ASCVD risk in proportion to the extent that atherogenic cholesterol is reduced. This benefit is presumed to result from atherogenic cholesterol lowering through multiple modalities, including lifestyle and drug therapies.

Kindly correlate clinically
Results relate only to the sample, as received

Dr. Gaurav Garg MBBS, MD (Pathology)
Dr. Reema Agrawal MBBS, MD (Pathology)

Fig 2: After Treatment.

Table 4: Assessment of Clinical Signs and Symptoms.

Symptoms	B.T.	A.T.
Weight	118 kg	105 kg
BMI	40.8	36.3
Heaviness in body (*Angagaurava*)	Present	Relieved 70%
Lethargy	Present	Relieved 80%
Dysponea on exertion (*kshudra shwasa*)	Present	Relieved 90%

DISCUSSION

Dyslipidemia can be understood as a metabolic disorder that closely correlates with *Medoroga* in *Ayurveda*. In *Medoroga*, the primary factors involved are *Kapha dosha* and *Medo dhatu*. Consumption of *kaphavardhak ahara-vihara* leads to the vitiation of both *Kapha dosha* and *Medo dhatu*. As *Medo dhatu* increases excessively, it obstructs the normal movement of *Vata dosha*. This obstruction results in an increase of *Agni* within the *kostha*, thereby enhancing digestive capacity and leading to increased food intake.

However, due to the vitiation of *Medo dhatu*, *Medoagni* (the metabolic factor responsible for fat metabolism) becomes impaired. As a result, it fails to properly convert the *poshya dhatu* (nourishable tissue components) into *Meda*. Additionally, the *poshak amsha* (nutritive essence) also becomes vitiated. This ultimately leads to the accumulation of *abadha meda* (unbound or excess fat), resulting in *Medoroga* (dyslipidemia).

Thus, from the perspective of *Samprapti*, the management of Medoroga should focus on correcting *Agni*, pacifying *Kapha*-dominant *Tridosha*, and restoring the normal state of *Medo dhatu*.

Arjunaghanvati has *kashaya rasa*, *ruksha* property, *Sheeta virya* and *katu vipaka* mainly. *Kashaya rasas* and *Laghu-ruksha guna* is helpful to manage *medoroga* due to opposite property of *kapha*. *Jathargni* is increased in *medoroga* which is compensated by *Sheeta virya*. *Katu Vipaka* helps in the proper movement of *Vata* that is stagnant in the *Kostha*, and this *Vata* in turn enhances *Jatharagni*. Some studies shows that *Arjuna* has hypolipidemic activity. Most of the drugs shows the result in lowering the TC, TG, LDL-C levels.[12, 13, 14]

Triphala guggulu contains *Triphala* (an equal quantity combination of *Haritaki* (*Terminalia chebula*), *Vibhitaki* (*Terminala bellirica*), *Amalaki* (*Emblica officinalis*), *Pippali* (*Piper longum*) and *Guggulu* (*Commiphora wightii*). *Triphala* promotes proper digestion and absorption of food, decreased total cholesterol, triglycerides and low-density lipoprotein cholesterol, improve circulation, relax bile ducts, maintain homeostasis of endocrine system and increases production of red blood cells and hemoglobin.[15,16] It is a potential therapeutic agent for weight loss and reduction of body fat.[17] *Pippali* (*Piper longun*) is *Katu*, *Tikta rasa*, *Laghu*, *Sara* (instability), *Tikshna guna*, *Ushna virya Madhura vipaka*, *Kaphavata Shamaka* in their property and works against *Kaphadosha* and reduces the fat.[18] A study on *Pippali* indicates that piperine is rapidly absorbed across the intestinal barrier via the intracellular pathway. It may influence membrane dynamics due to its ability to easily integrate into lipid layers, thereby enhancing permeability across biological barriers. Additionally, it exhibits lipid-lowering and anti-obesity effects without altering appetite.[19,20] *Guggulu* (*Commiphora wightii*) is *Tikta*, *Katu rasa*, *Laghu*, *Ruksha*, *Vishada*, *Sukshuna*, *Sara*, *Katu vipaka* and *Ushna virya* in their properties.[21] It is best drug for obesity.[22]

Punarnava Mandoor has drugs which acts on decreasing *kapha*. It works on *Srotas* (functional channels) and *Agni* (digestive factors) by enhancing digestive capacity as a result of their *Deepana* (enhancing metabolic fire), *Pachana* (enhancing digestion) properties.

CONCLUSION

This case study concludes that a combined Ayurvedic approach using *Arjunaghanvati*, *Triphala Guggulu*, and *Punarnava Mandoor* with diet and lifestyle modification showed significant improvement in dyslipidemia. The patient showed reduction in body weight, relief in symptoms, and improvement in lipid profile, indicating effective management of the condition.

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