



World Journal of Pharmaceutical Science & Technology

Journal homepage: www.wjpst.com

CASE STUDY

MANAGEMENT OF DYSLIPIDAEMIA THROUGH AYURVEDA: A CASE STUDY

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Received: 10-01-2024, Revised: 12-02-2024, Accepted: 03-03-2024

ABSTRACT

Dyslipidaemia is a disorder of lipid metabolism characterized by abnormalities in any or all lipoproteins (HDL or LDL) in the blood. In present case, patient was suffering from weight gain, calf pain, fatigue and weakness. Complete treatment protocol including lifestyle and diet changes, herbal and herbo-mineral medicines was advised. Medications namely Tablet Amrutarasa (250 mg twice daily after food for 2.5 months), Cholestrin granules (1 teaspoon after breakfast and dinner for 2.5 months) and Easy detox granules (1 teaspoon after dinner for 2.5 months) were given. Lipid profile was assessed before and after treatment. The results showed reduction in total cholesterol (248 mg/dL to 185 mg/dL) and LDL cholesterol (184 mg/dL to 119 mg/dL) levels. Thus, the treatment protocol was helpful in reduction of sign and symptoms of dyslipidaemia and in turn obesity.

INTRODUCTION

Dyslipidaemia is a disorder of lipid metabolism characterized by abnormalities in any or all lipoproteins in the blood. According to an ICMR-INDIAB study in year 2022, the prevalence of hypercholesterolemia was 13.9%, hypertriglyceridemia was 29.5%.

Cholesterol is a precursor to steroid hormones and bile acids. It is waxy, fat-like material (lipid) present in the cell membrane; carried to the bloodstream by lipoproteins. or high-density lipoprotein cholesterol, are the

two main types of lipoproteins namely LDL-C (Low density lipo-protein) and HDL-C (High-density lipoprotein). HDL-C is regarded as the "good" cholesterol since it aids in the removal of LDL-C from the arteries, while LDL-C is regarded as the "bad" cholesterol because it is responsible for atherosclerosis. The total cholesterol comprises of LDL-C, HDL-C, and triglycerides. LDL-C contributes 60% to 70%, bulk of total cholesterol levels.

Hypercholesterolaemia is defined as having high levels of total cholesterol or LDL-C and normal or low levels of HDL-C. Elevated cholesterol levels are primarily caused by high saturated fat intake, a cholesterol-rich diet, obesity, and lack of physical activity.

Hyperlipidaemia is characterized as an elevated levels of lipid and lipoprotein in the blood, often it goes undetected clinically. Clinical manifestations include xanthelasma, corneal aircus, and prepatellar xanthomas. In a large number of cases, hyperlipidaemia is diagnosed after performing a lipid profile on patients who have risk factors or at random.

In ayurveda, hyperlipidaemia and dyslipidaemia are correlated with *medo- vridhi*. For its treatment ayurveda has proposed complete treatment protocol including lifestyle and diet changes, herbal and herbo-mineral medicines. This is implemented in the case study.

In this case study, we decided to advise Ayurvedic medicine in the form of tablet and granules along with some diet and lifestyle modifications. The aim was to achieve reduction in body weight & other associated complaints of *Medoroga*.

CASE STUDY

A male patient of 68 years of age came to Ayushakti Ayurveda Pvt Ltd, Navi Mumbai branch OPD with complaints of weight gain, calf pain, fatigue and weakness.

Physical examination and Initial investigation

Blood pressure – 130/80 mm of Hg

Pulse rate – 78/min

Height 164 cm

Weight- 83 kg

BMI – 30.9 kg/m². Hence, it is a case of obesity.

Laboratory evaluation

Lipid profile total

Total Cholesterol – 248 mg/dl (High)

Triglycerides – 143 mg/dl

HDL Cholesterol – 59 mg/dl

LDL Cholesterol – 184 mg/dl (High)

Non-HDL Cholesterol – 189 mg/dl (High)

Very low-density lipoprotein – 28.6 mg/dl

LDL/HDL RATIO – 3.1 (High)

CLINICAL FEATURES:

Patient was complaining increase in weight since 6 -8 months, stretching type of pain in both legs, fatigue and weakness in the last 3 months. Patient has no history of diabetes, hypertension etc. On investigation he was reported as a patient of hypercholesterolemia. He received no medication for it. There is no history of addiction and any surgical procedure.

He was analysed on the basis of ayurvedic clinical examination parameters as follows

Agni: agnimandya

Koshtha parikshan: Baddha koshta (constipated)

Jivha parikshan: Saamata

Nadi parikshana: guruta and manda gati.

Treatment protocol

The treatment protocol advised is mentioned in table no. 1.

Table no. 1: Therapeutic intervention

SN	Drug	Dose	Time	Duration
1.	Tablet Amrutarasa (250 mg)	2 tablets BD	After food	2.5 months
2.	Cholestrin granules	1 teaspoon	After breakfast and dinner	2.5 months
3.	Easy detox granules	1 teaspoon	After dinner	2.5 months

Dietary regimens

We have thoroughly examined the case and given following Ayurvedic management for keeping in views that: “Dietary modification is an important component in the management of Dyslipidaemia”.

Specific Pathya: *Chapatti* made up of flour containing ingredients (barley and wheat).

General Pathya Ahara-Vihara/ life style measures

- Eat food when hungry
- Post meal after 45 min walking
- Strict advice for importance of exercise and daily cycling for 30 minutes.

Apathya/avoidable life style measures

- Excessive oily fried items, high sugar containing items
- Sleeping during day time.
- High fats, cholesterol like excessive cheese, fast-food, late-night food, frequent bingeing, food from unhygienic places etc.

OBSERVATIONS AND RESULTS:

The advised dietary regime and lifestyle medication was followed by patient along with internal medication for two and half months. Follow-up was done after two and half months. Post to that lipid profile was assessed and reduction in total cholesterol (248 mg/dL to 185 mg/dL) and LDL cholesterol (184 mg/dL to 119 mg/dL) was observed. Fig.1 and 2.

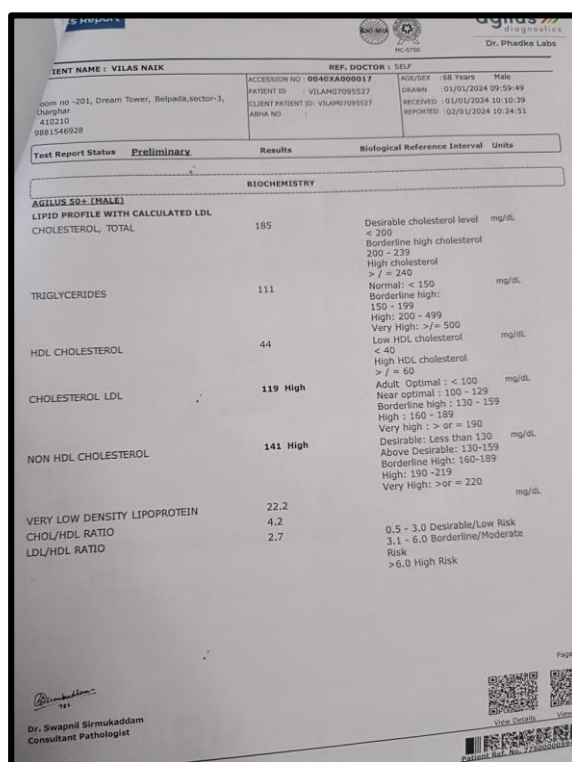
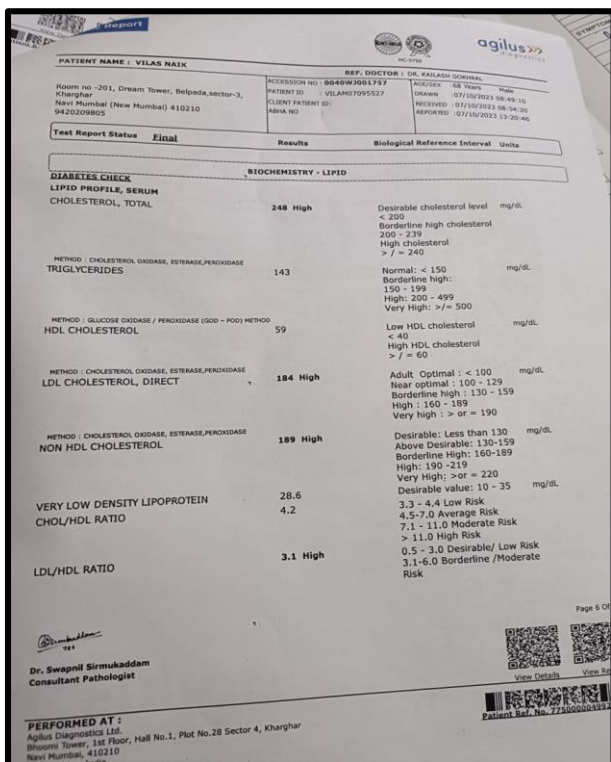


Fig 1: Lipid Profile before treatment

Fig 2: Lipid Profile after treatment

(07/10/2023)

(01/01/2024)

DISCUSSION

Tablet Amrutarasa contains *Amalaki fruit (Emblica officinalis)*, *Tankan (Sodi biobras)*, *Abhrak bhasma (Mica)*, *Shunthi rhizome (Zingiber officinale)*, *Marich fruit (Piper nigrum)*, *Pippali fruit (Piper longum)*, *Tamra Bhasma (Cuprum)*, *Dalchini (Cinnamomum zeylenicum)*, *Tejpatra (Cinnamomum tamala)*, *Ela (Elettaria cardamomum)*, *Nagakeshar (Mesua ferrea)*, *Shankha Bhasma (Turbinella rappa)*, *Bilva (Aegle marmelos)*, *Karchur (Curcuma zedoria)*, *Yashtimadhu (Glycerrhiza glabra)*, *Triphala (Emblica officinalis, Terminalia chebula, Terminalia belerica)*, *Bhringaraj swarasa (Eclipta alba)*.

As dyslipidemia is compared to *medoroga* in ayurveda, *pachan* at *rasa dhatu* stage should be done as *rasa* is the primary nutritive pool from which *Rakta*, *Mamsa*, *Meda*, and other *Dhatus* obtain nutrients. All other drugs like *bilva*, *dalchini*, *nagakeshar*, *karchur* etc are mostly *tikta*, *kashaya*, *katu* in *rasa* and have properties that pacify *vata* and *kapha* dosha.

Studies indicate that Amalaki attenuate oxidative stress and may prevent hyperlipidemia associated with ageing.ⁱ Cu²⁺-induced LDL oxidation and cholesterol fed rats were used to investigate the effects of *Emblica officinalis* on low-density lipoprotein (LDL) oxidation and cholesterol levels in vitro and in vivo. It was concluded that *Emblica officinalis* may be effective for hyper-cholesterolemia and prevention of Atherosclerosis.ⁱⁱ Double blind controlled clinical trial on 45 patient show that ginger has significant lipid lowering effect compared to placebo.ⁱⁱⁱ

Easy Detox Granules contain *Haritaki fruit (I)*, *Sonamukhi leaves (Cassia angustifolia)*, *Mishrey (Foeniculum vulgare)* seed, *Yashtimadhu (Glycerrhiza glabra)* root, *Bahava (Cassia fistula)* fruit, *Trivrit (Ipomoea turpenthum)* root, *Hingu (Ferula narthex)* gum resin, *Saindhav (Sodium chloridum)*, *Shunth (Zingiber officinale)*. All ingredients mentioned here have *vata* and *kapha* pacifying properties. In in-vivo study done on atherogenic diet induced hyperlipidemic model, the rats receiving treatment with *Haritaki* show significant reduction in total cholesterol, triglycerides, total protein and elevation of high-density lipoprotein cholesterol.^{iv} Ethanol extracts of *cassia angustifolia* show hypolipidemic effect in Triton X 100 induced Hyperlipidemia in rats.^v

Cholestrin granules contain *Ashwakarna (Dipterocarpus turbinatus)* Seed, *Shweta jiraka (Cuminum cyminum)*, *Chitraka (Plumbago zeylanica)*, *Amalaki (Emblica officinalis)*, *Dhanyaka (Coriandrum sativum)*, *Vrukshamla (Garcinia indica)*, *Trikatu (Zingiber officinalis, Piper nigrum, Piper longum)*, Raspberry flavour. The granules are *agni deepana*, *anulomana*, *rasa-rakta-mamsa-meda pachana*, collectively pacify *tridosha* predominantly *kapha dosha*. Thus, helpful to reduce sign and symptoms of *kapha-medo dushti*.

COCLUSION

The study concluded that combining Ayurvedic medicine with strict Pathya-Apathya measures has a beneficial effect on hyper-cholesterolemia and hyper lipidaemia and high BMI. Thus, helpful in reduction of sign and

symptoms of obesity. At the end of therapy, there was improvement in clinical symptoms and no adverse effects were observed.

REFERENCES

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- ⁱ Bhavesh C. Variya, Anita K. Bakrania, Snehal S. Patel, *Emblica officinalis* (Amla): A review for its phytochemistry, ethnomedicinal uses and medicinal potentials with respect to molecular mechanisms, *Pharmacological Research*, Volume 111,2016, Pages 180-200.
- ⁱⁱ Jaiswal, Vishal & Jaiswal, R. (2022). A Drug Review Of Amalaki (*Emblica Officinalis*) : A Traditional Indian Drug With Contemporary Applications. *Journal of Pharmaceutical Negative Results*. 13. 4833-4845. 10.47750/pnr.2022.13. S10.586
- ⁱⁱⁱ Alizadeh-Navaei R, Roozbeh F, Saravi M, Pouramir M, Jalali F, Moghadamnia AA. Investigation of the effect of ginger on the lipid levels. A double blind controlled clinical trial. *Saudi Med J*. 2008 Sep;29(9):1280-4. PMID: 18813412.
- ^{iv} Maruthappan V, Shree KS. Hypolipidemic activity of haritaki (*terminalia chebula*) in atherogenic diet induced hyperlipidemic rats. *J Adv Pharm Technol Res*. 2010 Apr;1(2):229-35. PMID: 22247850; PMCID: PMC3255428.
- ^v Nanumala, S.K. & Nischal, Y. & Sarika, M. & Shravya, G.S.S.. (2014). Hypolipidemic activity of ethanolic extracts of *cassia angustifolia* in triton- X 100 induced hyperlipidemia in Rats. *Asian Journal of Pharmaceutical and Clinical Research*. 7. 189-191.