

## A CLINICAL STUDY ON HYPERTRIGLYCERIDEMIA VIS-A- VIS BAHU ABADDHA MEDAS

Sneha Sawant<sup>1</sup>; Mythrey R.C<sup>2</sup>; Gajanana Hegde<sup>3</sup>

1. PG Scholar, Dept. Of PG Studies in Kayachikitsa, GAMC Mysore, Karnataka
2. Asst. Professor, Dept. Of PG Studies in Kayachikitsa, GAMC Mysore, Karnataka
3. Professor & HOD, Dept. Of PG Studies in Kayachikitsa, GAMC Mysore, Karnataka

### ABSTRACT

Hypertriglyceridemia is defined as increase amount of triglycerides in the blood. Patients of Hypertriglyceridemia are asymptomatic. The diagnosis is done only on serum triglyceride levels. Triglycerides resembles free moving lipids in the blood. This study is an attempt to evaluate the line of treatment for Hypertriglyceridemia vis-à-vis Bahu abaddha medas. Present study was conducted on 35 patients for a duration of 30 days. Patients were assigned into single group and were administered with mustadi choorna 6 gms BD after food and vidangadi kwatha 30 ml TID after food. Assessment of Serum triglycerides was done on 0th day i.e before intervention and 31st day i.e after intervention. Results were statistically analyzed before and after intervention by using Descriptive statistics, Paired sample 't' test using Statistical Presentation System Software (SPSS) for windows. Combined effect of intervention showed statistically highly significant results with 'P' value 0.000.

**Keywords:** Hypertriglyceridemia, Bahu abaddha medas, Mustadi choorna, Vidangadi kwatha

### INTRODUCTION

Hypertriglyceridemia is defined as an abnormal concentration of triglycerides in blood, resulted from a disorder of lipoprotein metabolism.<sup>1</sup> As per National Cholesterol Education Program Adult Treatment Panel (NCEP ATP III) guidelines, a normal triglyceride level is 150 mg/dl.<sup>2</sup> In India prevalence of triglycerides level >150mg/dl is 3.4%<sup>3</sup> and the incidences are increasing every year. Hypertriglyceridemia is prevalent in 18.6% of men and 4.2% of women between 16 and 65 years of age.<sup>4</sup> High triglyceride levels are associated with a collection of disorders known as metabolic

syndrome and has increased risk of developing diabetes, atherosclerosis and by extension, the risk of stroke and heart disease. These are grouped under chronic non communicable diseases, and are caused due to genetic predisposition, unhealthy food habits, stress, addiction and sedentary life styles. These diseases are increasing rapidly in developing countries and are responsible for causing high rates of morbidity and mortality. Extreme high levels of triglycerides cause inflammation of pancreas, risk for fatty liver, lipemia retinalis and chylomicron syndrome. The National Cholesterol Education Program (NCEP ) opines, triglycerides

to be an independent risk factor for coronary heart disease (CHD), even after adjustment for High density lipoproteins (HDL) & Low density Lipoproteins (LDL).<sup>5</sup> In western system of medicine, management of elevated serum triglycerides include both dietary management and drug therapy which includes lipid lowering drugs like statins, resins, niacin and fibrates which give rapid relief but long term side effects such as hepatic or renal impairment, malaise, Liver enzyme elevation etc. Even though, Hypertriglyceridemia is essentially asymptomatic, it is identified as a potential risk factor for various diseases like Coronary Heart Diseases (CHD), Cerebrovascular accidents (CVA), metabolic syndromes and atherosclerosis. During past few decades there has been extensive research carried out in this regard and effective drugs have been put forth. Ayurveda emphasizes wide range of herbal and mineral drugs in this regard which are kaphamedohara, sthoulyahara and hrudya either individually or in combination will have a positive role in reducing elevated lipid profile. So, an attempt has been made to evaluate the effect of mustadi choorna and vidangadi kwatha in the Hypertriglyceridemia vis-à-vis bahu abaddha medas.

## **MATERIALS AND METHODS**

**Source of Data:** Patients were selected from the OPD, IPD of Government Ayurveda Medical College and Hospital, Mysore. The patients were registered and treated on out-patient basis.

**Sample size and Sampling method:** Irrespective of gender, socio - economic status and religion, 42 patients fulfilling the inclusion criteria were registered for the study . There were 7 dropouts and study was completed with 35 patients who were assigned under a single group.

## **Inclusion Criteria:**

- Patients with serum triglyceride levels > 150 mg/dL were included.
- Patients of either gender, within the age group of 18-70 years were included.
- Both fresh and treated cases were included.

## **Exclusion Criteria:**

Patients with major systemic disorders such as, uncontrolled diabetes, uncontrolled hypertension and Psycho-Neuro-Endocrinal disorders, Myocardial Infarction, Stroke or Severe Arrhythmia, severe pulmonary dysfunction which interferes with the intervention were excluded.

Pregnant & Lactating women were excluded.

**Diagnostic Criteria:** The diagnosis was based on serological investigation i.e serum Triglyceride level > 150 mg/dL

## **Investigations:**

- Specific investigation – Serum triglyceride (12 hr fasting blood sample).
- Other Blood investigations – Hb %, TC, DC, ESR, RBS.
- Urine investigations - Urine Sugar, microscopic, albumin were done to rule out other systemic diseases or complications.

**Study Design:** It was an observational clinical study with pre test and post test design.

**Intervention:** Mustadi choorna: Choorna matra- 12 gms/day divided into two equal doses ( 6 gms) administered with honey after food twice daily for 30 days.

Vidangadi kwatha:

Matra: 45 ml in three divided doses after food thrice daily for 30 days.

**Assessment criteria:** Assessment of combined effect of Mustadi choorna and Vidangadi kwatha on Serum Triglycerides was done on the basis of pre test on (0 day) & post test on (31st day) values of Serum Triglycerides.

**Statistical methods:** The data was collected before & after intervention and assessed statistically by using descriptive statistics, paired sample 't' test. Analysis was done by using Service product for statistical solution (SPSS) for windows software.

**OBSERVATION AND RESULTS**

Observations:

Maximum 42.8% patients were from the age group of 41-50 years, male patients were 54% . Maximum patients 37.14 % were having Kaphapitta Prakriti; 62.85% patients

had sedentary type of work, 80 % patients belonged to urban area; 88.57% patients were fresh cases; majority patients i.e. 62.85% belonged to upper middle class; 62.85% patients were having the habit of day sleep; 31.42% patients had habits of alcohol & smoking, 42.85% patients had co morbidity of diabetes & hypertension. 65.71% patients were consuming mixed diet. A maximum 54.2% patients were having normal BMI & 65.71% patients had samagni .

**Results: Table No: 01. Showing the Triglyceride levels in patients of hypertriglyceridemia**

Triglyceride Levels	Mean	Std. Deviation	N		
BT	244.5143	74.88280	35		
AT	182.0857	55.04029	35		
Paired Differences					
	Mean	Std. Deviation	T	Df	P value
BT - AT ...	62.42857	56.67881	6.516	34	.000

Over all result showed after the completion of one month intervention it was found that there was a marked decrease in Serum Triglyceride level. Pre test to post test mean difference was 62.428 mg/dL and this change was statistically significant with a P value 0.000.

**DISCUSSION**

Patients of hypertriglyceridemia are asymptomatic. Diagnosis is mainly done on the basis of 12 hourfasting serum triglyceride levels. Fasting samples were taken as Triglycerides are found to be high in blood 4-5 hours after meals. And also the reference values are based on fasting Triglyceride levels.

Among the total number of patients, maximum patients ie 15 (42.8 %) were found in the age group of 41-50 yrs. From the demographic data, it can be assessed that, incidence of Dyslipidaemia is more in 41-50 yrs age group. This shows a positive relation between Dyslipidaemia and age. 22 (62.85%) patients were from upper middle class. It may be just

due to dietary habits, lifestyle and also might be due to awareness among the people about the disease which made them to undergo routine examinations. 96.3 % of the patients were literates, which show the increased awareness among people towards screening and detecting the risk factors of coronary artery disease. 22(62.85%) patients had sedentary type of work. Due to modern technologies physical stress is reduced, as a result energy intake is more than energy expenditure. This might be the added risk factor for the Hypertriglyceridemia. 31.42 % patients having habit of smoking and alcohol. Among them very few were consuming alcohol on daily basis and others were occasionally consuming. Small amount of alcohol raise the HDL-C cholesterol which is a coronary protective factor; but large amount, increases LDL, VLDL & Triglyceride which are strongly atherogenic. Smoking does not lead to increase in cholesterol level, rather it

deteriorates oxygen delivery & use in myocardium causes mild coronary vasoconstriction, increases platelet activity and damages the endothelium. Thus leading to atherogenic changes, this is seen in coronary artery diseases. Mixed diet pattern was dominant. Milk and milk products, oily and fried foods were consumed by majority. Sunflower oil, safflower oil, groundnut oil for cooking, was used by most of the patient. Non vegetarian diet included eggs, chicken, mutton have more of unsaturated fats, which when consumed in excess, increases the lipids. Hence the incidence of hypertriglyceridemia was high with those who were having mixed diet pattern. Day sleep is one of the important nidana which vitiates kapha dosha, a key factor in the genesis of Bahu abaddha medas. Even day sleep signifies the sedentary lifestyle which has a direct effect on the disease. 19 number of patients had normal BMI. Followed by 9 obese patients. It proves that Hypertriglyceridemia is seen in both in individuals with normal BMI & obese individuals. After the completion of one month intervention it was found that there was a marked decrease in serum Triglyceride level. Pre test to post test mean difference was 62.48 mg/dL. There was statistically highly significant reduction in serum triglyceride levels with P value of 0.000. This is attributed to effect of combination of Mustadi choorna and Vidangadi kashaya. As Mustadi choorna is mainly having tikta, kashaya and katu rasa, ushna viryatmaka, rooksha, and kaphameda shamaka dravyas. Drugs like musta, neem, patha, kutaja, khadira, haridra, daruharidra, devadaru due to tikta rasa acts as deepaka, amapachaka, srotoshodhaka. This also helps in utpatti of nirama rasa dhatu which eventually forms optimal medo dhatu. katu rasa corrects jatharagni and medodhatwagni thereby

resulting in proper quantity and quality of both sthayi and asthayi medo dhatus. Musta is kapha pitta hara and triphala is tridosha hara, medohara, vatanulomaka. The drugs like patha and gokshura are kledahara. Aragvadha, kutaja, patha, nimba, khadira, haridra and daruharidra are indicated in diseases like kushtha, medo roga and prameha due to involvement of rasa, meda dhatus and kapha dosha. Musta, triphala, haridra, nimba, khadira, daruharidra, twak, kutaja being rooksha gunatamaka, are kaphamedo hara. Also drugs like triphala and khadira acts as rasayana which lead to formation of optimal dhatus. Vidangadi kashaya: Most of drugs are tikta, katu, kashaya rasatmaka, laghu, rooksha gunatmaka, ushna viryatmaka and tridosha hara especially kaphavata hara. Guggulu is lekhana, medohara, kaphavatahara. Jeeraka, shunti, maricha, pippali, vidanga are deepaka, Guduchi and triphala are tridosha shamaka, rasayana. By the virtue of its deepana, pachana karma, the combination of drugs work even at the level of agni, its deepana property mainly corrects the medodhatvagnimandyata and checks the further progression of this disease by preventing the formation of vikruta meda. Due to tikta, kashaya rasa, laghu guna, and lekhana karma it acts as kapha medo hara. Also due to its ushna virya it acts as kaphavatahara. In total the combination of all the above properties and their relative effects reduces the vitiated kapha and meda.

Hence mustadichoorna and vidangadi kashaya in combination brings about virookshana ie reduction of kapha and medas, in the shareera and there by acts on bahu abaddha medas which is observed in this study with the significant results.

## **CONCLUSION**

Hypertriglyceridemia is one of the major modifiable risk factor for diabetes mellitus, atherosclerotic diseases like coronary artery diseases, stroke etc. A precise reference of Hypertriglyceridemia is not available in Ayurveda but it can be understood in terms of Bahu abaddha medas. It is a medo dushti predominant disorder . Being a Metabolic syndrome there lies a definite relation between pathophysiology of Hypertriglyceridemia with the agnivaigunya at different levels starting from jatharagni up to dhatwagni and kapha as pradhana dosha, rasa and meda dushya. Faulty dietary and lifestyle factors (Vishistaaharavashat), and unseen factors (Adrishtavashat/ beejadosha) plays important role in the pathogenesis.

As patients are asymptomatic diagnosis is made on biochemical investigations ie on serum triglyceride. Mustadi choorna and Vidangadi kashaya has found effective in reducing serum triglyceride levels. The study has shown statistically significant reduction in Serum Triglyceride levels with P value 0.000.

## REFERENCES

1. Kasper, Braunwald, Fauci, Hauser, Longo, Jameson ,Harrison's Principles of Internal Medicine- Volume I , 7th edition, McGraw-Hill Book Co-Singapore for manufacture and exports Textbook of Internal Medicine, Chapter 356; Disorders of Lipoprotein Metabolism, pg no.3145-3156
2. J. I. Cleeman, "Executive summary of the third report of the National Cholesterol

Education Program (NCEP) 2001 expert panel on detection, evaluation, and treatment of high blood cholesterol in adults (adult treatment panel III)," The Journal of the American Medical Association, vol. 285, no. 19, pp. 2486–2497.

3. Rajmohan L et al., Association between isolated hypercholesterolemia, isolated hyper triglyceridemia and coronary artery disease in south Indian type 2 diabetic patients. Indian Heart Journal 2000; 52 (4) 400-406.
4. Review Article, Olga Diakoumakou et al. Severe/Extreme Hypertriglyceridemia and LDL Apheretic Treatment: Review of the Literature, Original Findings.
5. J. I. Cleeman, "Executive summary of the third report of the National Cholesterol Education Program (NCEP) 2001 expert panel on detection, evaluation, and treatment of high blood cholesterol in adults (adult treatment panel III)," The Journal of the American Medical Association, vol. 285, no. 19, pp. 2486–2497.

## CORRESPONDING AUTHOR

**Dr. Sneha Sawant**

PG Scholar, Dept. Of PG Studies in  
Kayachikitsa, GAMC Mysore, Karnataka

*Source of support: Nil*

*Conflict of interest: None Declared*