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RESEARCH ARTICLE

EFFECT OF VADAVANALA RAS IN MEDO ROGA WSR TO DYSLIPIDEMIA - AN OVERVIEW

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ABSTRACT

Now a days due to consumption of improper diet, sedentary life style, and environmental factors various metabolic disorders are arising. Medoroga is one such disease mentioned in classical texts. Medo roga is a condition in which due to various etiological factors there is an excessive increase in the medodhatu and decrease in Medodhatvagni. Consequently the other body tissues do not get properly nourished because of the channels being blocked with medas. Dyslipidemia is a condition which shares a lot of similarities with Medoroga. Dyslipidemia is a disorder characterized by abnormally high concentrations of total Cholesterol, VLDL, LDL, triglycerides and decreased concentration of HDL in the blood caused by abnormal lipoprotein metabolism and has risk of producing various complications like cardiovascular diseases, obesity, hypertension, atherosclerosis etc. Alarmingly the prevalence of dyslipidemia defined according to NCEP (National Cholesterol Education Programme Guidelines) in Indians is very high with 79% of subjects having atleast one lipid abnormality, with decreased high density lipoprotein cholesterol (HDL-C) levels in 72.3% subjects, hypertriglyceridemia in 29.5% subjects and elevated low density lipoprotein cholesterol (LDL-C) levels in 11.8% of subjects¹. Hence management of dyslipidemia is necessary. Agni is responsible for various metabolic activities and Medoroga is mainly imbalance of agni. Vadavanalarasa is mentioned in the management of medoroga. Probably Vadavanalaras can correct the Agni at dhatu levels thus breaking the samprapthi of medo roga. As the ingredients of this aushada has mainly laghu, ruksha, teeksa etc properties, these may help in correcting the Dyslipidemia.

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INTRODUCTION

Ayurveda is a science of Life, which serves two purposes to mankind i.e., it intends to maintain the health of a healthy individual (स्वस्थस्यस्वास्थ्यरक्षणं) and also intends to cure a diseased person (आतुरस्यविकारप्रशमनं)². Rapid urbanization and changing lifestyles in cities often increase unhealthy lifestyle habits like a sedentary lifestyle, consumption of high-energy-dense foods, lack of physical exercises, stress etc leading to improper maintenance of the individuals health, thus finally leading to different lifestyle disorders or metabolic disorders. In the present era the list of lifestyle diseases (also known as 'non-communicable diseases' or chronic diseases of lifestyle') is growing fast. It includes insomnia, cardio vascular diseases, diabetes mellitus, dyslipidemia, hypertension and overweight/obesity etc. Medoroga can be considered among these lifestyle disorders. Different authors of various classical texts has mentioned various treatment modalities. Ayurveda is beneficial in both Preventative and Curative aspects of Medoroga. Dyslipidemia is a disorder of lipid metabolism. Dyslipidemia is a condition characterized by an elevation in plasma cholesterol, Triglycerides, or both, or low HDL, or High LDL levels that leads to the development

of atherosclerosis which in turn is known to cause CVD, CVA, HTN, Peripheral Vascular ailment etc. According to Madhava Nidana 35/1-2, all the diseases are caused due to Mandagni (All diseases are caused by slow fire and stomach problems³). So Agni plays an important role in metabolic disorder. Among the 13 types of agni⁴. Bhutagni refers to the final digestion in the liver which is the major site where the absorbed nutrients undergo biochemical transformation. Liver plays an important role in metabolism, wherein several processes such as trans-amination, de-amination, beta-oxidation of fatty acids, Glycolysis etc. take place. The overall intermediary metabolism (involving fats, carbohydrates and proteins) can be understood as the functioning of the Bhutagnis whereas Dhatwagni acts at tissue-level (in fact, at cellular level) upon the products of Bhutagni. The bio-energetic processes of a cell seem to be under the regulation of Dhātagnis. The seven dhatus contain their own Agni to metabolize the nutrient materials supplied to them through their own srotasi.e., Medagni in the Medadhatu. So lipid metabolism occurs in the liver and the medoroga occurs due to vitiation of medodhatwagni. This rasaoushada is expected to act on at this level, thus correcting the lipid metabolism.

NIDANA^{5,6,7,8}: In Ayurvedic literature, various acharyas have mentioned many aetiological factors for Medodushti. In brief, all causative factors described in Ayurveda can be classified into four groups.

1) Aharaja 2) Viharaja 3) Manasika 4) Anya

Aharaja Nidana: Atisampurana, Adhyashana, Madhurashita, snigdha shleshma, Ahara sevana, navaanna, navamadya, payasa dadhi sarpi ikshu guda shali godhuma Masha etc sevana.

Viharaja Nidana: Avyayama (Lack of physical exercise), Avyavaya (Lack of sexual life), Divaswapa (Day's sleep) Asana Sukha (Luxurious sitting), Swapnaprasangat (Excessive sleep), Gandhamalyanu Sevana (Using of perfumes garlands), Bhojanotar Snana (Bathing after taking the meals), Bhojanotar Nidra (Sleeping after meal), Bhojanotara Aushadha sevana (Drugs after meal) etc.

Manasika Nidana: Harsha nityatva (Uninterrupted cheerfulness), Achintanata (Lack of anxiety) Manasonivritti (Relaxation from tension), Priyadarshana (Observations of beloved things) Saukhyena etc.

Anya Nidana: Ama rasa, Snigdha, Madhura Basti Sevana (Administration of unctuous & Sweet enema) Taila abhyanga (Massaging of oil), Snigdha Udvartana (Unctuous unction), Bija dosha svabhavata (Heridity) etc.

SAMPRAPTI

The prime causative factor for medoroga is kapha dosha and medodhatu. As kapha and medas are having similar properties, the chances for their association and vitiation are more. Due to various nidana, there will be vitiation of Agni leading to formation of Ama. Agnimandya at dhatwagni level (one or more), particularly at Medhodhatvagni leads to excess accumulation of abnormal quantities of Medodhatu in the body. All the channels that continuously supply nutrients to other tissues are blocked by medas, so further tissues are not properly formed and only medas gets accumulated⁹. This condition can be referred to as Dyslipidemia.

RUPA

Chala Sphika, Udar, Sthana (Pendulous Buttocks, Abdomen, Breast), Ayatha Upachaya (Abnormal growth of the body), Udara parshva vriddhi (enlargement of abdomen), Anutsaha (Lack of Enthusiasm), Alasya (Laziness), Moha, Javoparodha (Lack of agility), Alpavega, Shrama, Sarvakriyasu Asamrthata (Unable to bear the any physical exercise) Alpa Bala Daurbalya (General weakness), Ayushohrasa (Shortening of the life span), Alpa Vyavaya (Lack of sexual life), Daurgandhya (Foul odour of body), Atisweda (Excessive sweating), Kshudh atimatra (Excessive hunger), Pipasatiyoga (Excessive Thirst), Nidradhikya (Excessive Sleep), Kshudra Swasa (Dyspnoea on exertion), Krathana, Alpa Prana (Low vitality power), Gadgadvani (Indistinctness of Speech), Gatrasada (Prostration of the Body), Saukumarata (Delicacy).

CHIKITSA

Unlike modern approach towards the disease, Ayurveda focuses on the root cause of the disease i.e. Agnimandya and related Dosha vitiation. The main aim of Medoroga Chikitsa is to alleviate main factors involved in the Samprapti of Medoroga¹⁵

- First of all Nidana Parivarjana.
- Restore the Medodhatvagni to its normal state as medodhatva gnimandya occurs.
- Correct unbalanced Dosha i.e. kapha and vata.
- To correct the Vitiated Medovaha srotas & Medodhatu.

The Dravya which are having Katu, Kashaya Rasa, Ushna, Teekshna Guna and Lekhana, Deepana, Pachana properties reduce Kapha, Meda, Ama and increase power of Agni are choice of drugs for treatment of Dyslipidemia. Vamana, Virechana and Lekhana Basti are the Shodhana procedures being used successfully in practice for the disease.

VADAVANALA RAS

As per the **RASAYOGA SAGARA** 'VA'karadi rasa sloka 2020–2024 ingredients mentioned are 1) Parada 1 part 2) Gandaka 2 Part 3) Vatsanabha 3 Parts 4) Pippali 4 Parts 5) Langali 5 Parts.

Procedure: shodhita Parada and shodhita Gandaka are made into Kajjali, later shudha vatsanabha, shudha Langali and Pippali are added to the above kajjali and bhavana is done with Nimbu swarasa for 1 day, later vati of 1 maricha pramana are made and dried in shade.

Indications: Cures different types of vata and kapha disorders, kusta roga, Gulma pleeha udara roga, Gridrasi, katisula, different types of sula (pain), medoroga, agni deeptikara. Ingredients of Vadavanalaras and their effect on medoroga / lipids is as follows

Kajjali: Kajjali (black sulfide of mercury) is a preparation which is made either triturating Parada (mercury) with Gandhaka (sulfur) alone in different proportions or Parada with Gandhaka along with other metals and minerals without using any liquid and is converted into very soft powder, just like collyrium. The Kajjali when used properly along with other metals or herbs can cure all the diseases, pacify all the three humors (Tridosha hara), increases Shukradhatu (Vrishya), immediately spreads in the body when consumed, clears the obstructed channels at the diseased organ, and enhances the properties of other metallic or herbal medication when taken along with proper Anupana^{17,18}.

Kajjali and lipid profile¹⁹: In Albino rats the treatment for 60 days decreased LDL levels whereas HDL levels were not significantly influenced. Total cholesterol and triglycerides levels were also decreased at the dose of 5 and 10 mg/kg. In sub-acute toxicity, 10 mg/kg (four times higher than the human dose) was investigated. Even in this dose, the Kajjali has shown no toxic effect. So kajjali due to specific properties may act on Lipid metabolism and clears the srotas.

Vatsanabha²⁰: Cow Urine-Treated Extract of vatsanabha significantly increased the HDL and VLDL but significantly decreased the LDL serum concentration of fat-administration doses compared to control. However, it did not alter the total cholesterol, triglyceride, and BUN. Vatsanabha has madhura rasa Laghu Ruksha tikshna vyavayi vikasi sukshma Ushna virya these properties can act as lekana karma.

Pippali²¹: The drug acts through its Kaṭu Rasa (pungent taste), Laghu (light), Snigdha (unctuous), Tikṣṇa guṇa (raggedness property), Madhura Vipāka (sweet metabolic transformation) and Anuṣṇa Vīrya (medium temperate active potency). In rats treatment with Piper longum extract for 15 days, reversed these plasma levels of TC, PL and TG by 27, 15 and 34%, respectively. The present investigation with cholesterol rich-HFD fed hyperlipidemic animals showed that Piper longum extract could stimulate PHLA and hepatic LPL activity, both of which play a key role in lipid catabolism and their utilization in body. Hypolipidemic activity of P. longum can be attributed towards the active principal ingredients present in the fruit. The P. longum fruit contains a many alkaloids and related compounds such as piperine, methyl piperine, piperonaline, piperettine, asarinine, piperundecalinine, piper longumine, piperlonguminine, brachystamide-B, N-isobutyl decadienamide, brachyamide-A, brachystine, pipericide, piperderidine, longamide, dehydropiperonaline piperidine etc.

Langali²²: Langali root contains Colchicine. In rats the lowered triglycerides, cholesterol as well as HDL may be due to the alkaloid colchicine which is responsible for the decrease in lipoproteins.

Within 4 h of colchicine treatment there was an 80% fall in serum very low density lipoproteins (VLDL), a 30% fall in serum high density lipoproteins (HDL), and no change in the $d > 1.21$ protein level. Langali is having katu-tikta-kashaya rasa, katuvipaka and ushnavirya; has tikshna, ruksha, sara and laghugunas. It pacifies kapha-vatadoshas, increases pitta dosha and has garbhapatana (abortifacient) property. It is indicated for various disease condition such as kushtha, shophya, arsha, vrana, dushtavrana, shula, krumi, visha, shalya, bastishula, kandu, shosha etc.

All the ingredients have the property of lipid metabolism correction/Lipid lowering property. Henceforth in clinical practice, it is watched that "timed release and sustained release" speculations of drugs triturated with Kajjali are more than the drugs without Kajjali. Sustained release of Kajjali compounds in GI tract undergoes the process of adsorption and hence also acts as GI stimulant. At the point when the plasma concentration of effective drug decreases, quickening of active drug happens through bio feed system. In between these two phases, the inert drug Kajjali will be slowly stimulating the local membrane enzymatic axis and effective drug dose decline is followed by inert drug release which when declines, again active drug is biochemically signaled for release¹⁹. So kajjali may act as a good drug carrier to the vitiated Medodhatu as it is having the action on lipid metabolism. Kajjali carries the pipali vatsanabha langali to the medhodhatu level, and these drugs stimulates the medo dhatwagni and thus breaking the samprapti due to their specific properties.

DISCUSSION

Improper Agni / metabolism of lipids is the prime cause of medoroga. The action of Agni on lipids occurs at three different levels.²³

Jatharagni : The main characteristic of Jatharagni is to cause Sanghatabela or disintegration of bigger molecules of food to make it ready for absorption. It does two functions, digestion and absorption. Jatharagni paka can be referred as the action of lingual lipase and gastric lipase present in the saliva and stomach respectively. Both enzymes split the fats into fatty acids and glycerol which can be understood as Sanghatbhedha of ingested lipid. The partially digested food from Amashaya moves to the Grahani where it undergoes emulsification by the bile salt and this emulsified fat is then split into fatty acids and glycerol under the influence of pancreatic and intestinal lipases. These are taken up by the epithelial cells of the intestine to form new triglycerides and are released as chylomicrons in the lymph.

Madura Avasthapaka: Saliva present in the mouth aids the digestion by splitting the fats by lingual lipase can be compared to this phase.

Amla Avasthapaka: The secretion of hydrochloric acid by gastric glands and activity of gastric lipase, in the duodenum pancreatic juice and action of enteric lipase can be compared to this phase.

Katu Avasthapaka: The phase of absorption of fatty acids and glycerol from the intestine and the formation of micelles can be compared to this phase.

Bhutagni: Dr. C. Dwarkanath has stated that the Bhutagnipaka occurs in liver. Thus the action of liver is to breakdown fats derived from plants and animal sources to their elemental form and rebuild them in the body as specific lipids. Cholesterol is primarily synthesized within the body (endogenous) production in the liver from acetyl CoA through the HMG-CoA pathway. Similarly the liver also synthesizes phospholipids, triglycerides and other categories of lipids. This synthesis of different categories of body lipids by liver which are easily assailable within the body cells may be known as the action of Bhutagnis.

Dhatwagni: The Sarabhaga of Annarasa is absorbed from the Amashaya and distributed throughout the body by means of the

Dhamnis., like this Medodhatu is formed by the action of Medodhatwagni. Chakarpani has mentioned two types of Dhatus viz, Asthayidhatu and Sthayi Dhatu. After the action of Dhatwagni, Asthayidhatu is precursor of the Sthayidhatu and is circulated in the body with Srotas, so Asthayibhaga of Medodhatu can be compared with lipoproteins synthesis in the liver, also refers to Abaddha Medas. Sthayi Dhatu of Medodhatu can be correlated with Adipose tissue and it also refers with Baddha Medas.

CONCLUSION

Due to various etiological factors, the vitiated Agni leads to medo roga / Dyslipidemia. In conventional system / modern medicine, to treat the dyslipidemia lipid lowering agents such as statins, resins, niacins, fibrates are used which give rapid relief but long term use may results in side effects. Although multiple risk factors includes smoking, sedentary life style, Hypertension, Diabetic mellitus etc are important in contribution of Atherosclerotic Cardio Vascular Disease (ASCVD), Dyslipidemia is the major condition necessary for Atherosclerotic process. Keeping in view of these factors Vadavanalaras which is an effective, potent, quick acting, palatable drug with small dosage may break the pathogenesis and may correct the lipid metabolism.

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