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Clinical Study on Effect of Tila Taila on Hyperlipidemia/ Hypertriglyceridemia

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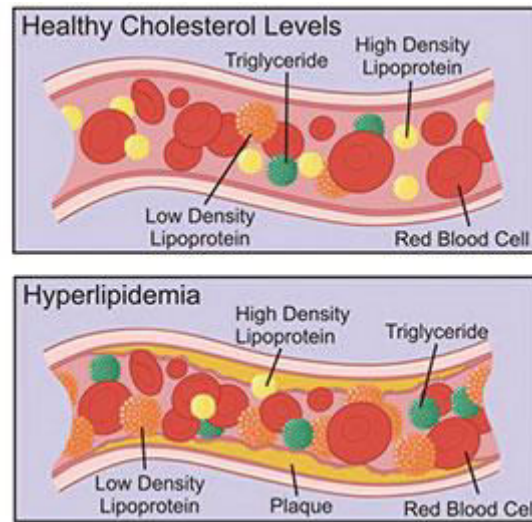
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ABSTRACT: Hyperlipidemia is a disorder which is identified as a potential risk factor for multitudes of diseases like cardiovascular diseases, metabolic syndrome and even hypertension. Hyperlipidemia is term used to denote raised serum levels of cholesterol or triglycerides or both. Though, there is no precise terminology for Hyperlipidemia mentioned in the Ayurvedic classics, A detailed study of Hyperlipidemia reveals its similarity to Asthayi Medo Dhatu Vriddhi on the basis of its Pathophysiology. Elevated plasma triglyceride concentration is a common biochemical finding, but the evidence for the benefit of treating this lipid disturbance remains less robust than that for treating elevated low-density lipoprotein-cholesterol. Part of the difficulty in the provision of specific recommendations has been the frequent coexistence of elevated triglycerides with other conditions that affect cardiovascular disease risk, such as depressed high-density lipoprotein-cholesterol, obesity, metabolic syndrome, proinflammatory and prothrombotic biomarkers, and type 2 diabetes. Recent investigations of outcomes of cardiovascular disease when medications are used to reduce triglyceride levels suggest that, although a net benefit probably exists, both relative and absolute risk reductions seem underwhelming when compared with the benefit of reducing low-density lipoprotein-cholesterol levels with treatment. However, the totality of evidence suggests that elevated triglyceride levels likely contribute independently to increased risk of cardiovascular disease, although there is no consensus about appropriate target levels. Furthermore, severe hypertriglyceridemia is associated with an increased risk of acute pancreatitis, irrespective of its effect on risk of cardiovascular disease.

KEYWORDS: hyperlipidemia, hypertriglyceridemia, cardiovascular, diabetes, lipoprotein, cholesterol

I. INTRODUCTION

Hyperlipidemia is a disorder which is identified as a potential risk factor for multitudes of diseases like cardiovascular diseases, metabolic syndrome and even hypertension. Hyperlipidemia is term used to denote raised serum levels of cholesterol or triglycerides or both. Though, there is no precise terminology for Hyperlipidemia mentioned in the Ayurvedic classics, A detailed study of Hyperlipidemia reveals its similarity to Asthayi Medo Dhatu Vriddhi on the basis of its Pathophysiology. In Ayurveda, ghrta (ghee) and taila (oil) are commonly used for treatment either internally or externally. It is commonly believed that by consumption of oil or ghee will lead to hyperlipidemia. Hyperlipidemia is an ailment of lipid metabolism produced by an increase of plasma concentration of the various lipid and lipoprotein, which cause cardiac disease, premature coronary artery disease, stroke, atherosclerosis and pancreatitis. Before the preparation of anyoushadhi siddha (medicated) taila (oil), and ghrta (ghee), murchana (processing of ghee) is a kind of samskara (procedure) mentioned in bhaishajya ratnavali.[1,2] On administration of panchatikta ghrta prepared by a murchita and murchita ghrta (processed ghee) in albino rats, the results shown murchana samskara (processing of ghee) helps to reduce total cholesterol, LDL, triglycerides and increase in HDL. Guna (properties) and karma (action) of the drugs used in the panchatikta ghrta and murchana samskara (processing of ghee) might have contributed. Recent studies also show that triphala, musta (*Cyperus rotandus*), haridra (*Curcuma longa*), and matulunga (*Citrus medica*) are used for murchana samskara (processing of ghee) have hypolipidemic and cardioprotective activity.[3,4]

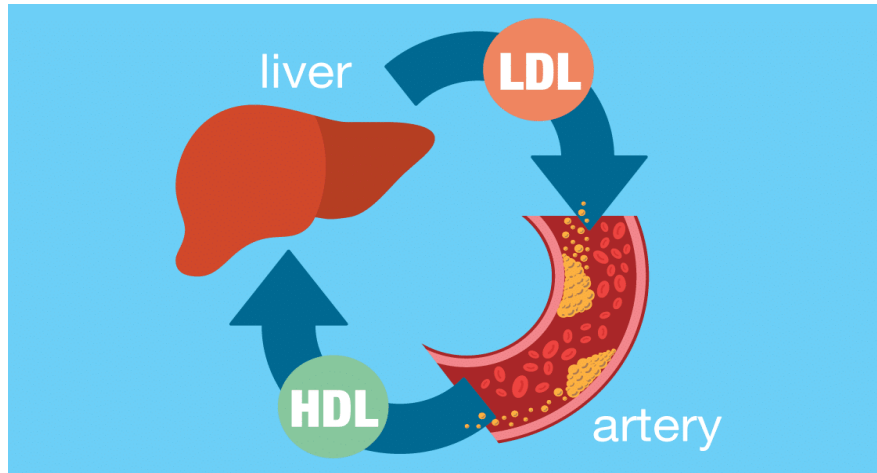


Different types of fat or lipid media are used in ayurvedic treatment. Ghrita (ghee), taila (oil), vasa (fat), and majja (marrow) are mainly four sneha dravya (fat media) mentioned in Ayurvedic classics. Goghrita (cow's ghee) and tila taila (oil) are said to be the best among all jangama (animal origin) and sthavara (plant origin) sneha (fat) dravya, respectively 1 . It is a belief in the masses that consumption of oil or ghee will lead to hyperlipidemia. Sneha in Ayurveda treatment is used wherein it acts therapeutically, giving the desired therapeutic result without any adverse effects. Before the preparation of any oushadhi siddha (medicated) taila (oil), and ghrita (ghee), murchana (processing of ghee) a kind of samskara (procedure) has to be adopted as mentioned in classics 2 . Previous research works carried out on physico chemical, chromatographical analysis, and experimental studies done on ghrita kalpana (ghee preparations) using Murchita ghrita (processed ghee) has also shown promising results 2, 3, 4, 5, 6. To explore some more data, this experimental study was conducted. Hyperlipidemia is an elevation of lipids (fats) in the bloodstream. These lipids include cholesterol, cholesterol esters (compounds), phospholipids, and triglycerides.[5,6]

II. DISCUSSION

It is of utmost significance because it leads to atherosclerosis of vessels (arterial walls), leading to vascular diseases. Hyperlipidemia may be associated with disorders such as heart attack, premature coronary artery disease, stroke, atherosclerosis, myocardial infarction, and pancreatitis 7, 8, 9, 10. Direct reference of hyperlipidemia in Ayurveda literature is not found, and this might be due to the fact that it is a metabolic disorder and not a full-fledged disease in itself. It is auxiliary to several other severe conditions like coronary artery disease, cerebrovascular accidents, metabolic syndrome, etc.[7,8] In Ayurveda, various attempts have been made to use distinctive nomenclature to denote the word hyperlipidemia as follows a) rasagata sneha vriddhib) rasa raktagata sneha vriddhic) medovriddhi d) medoroga or medodoshae) ama medo dhatu The study of Ayurvedic literature bears certain ambiguous references pertaining to an increase in the amount of circulating body lipids, yet the literal meaning of hyperlipidemia is not found to be distinctly stated anywhere. The study of hyperlipidemia can be done on the basis of studying two of the closest diseases in Ayurveda having some amount of relation with hyperlipidemia are atisthaulya or medo roga and prameha . To evaluate the hypolipidemic activity of panchatikta ghrita prepared by a Murchita ghrita (ghee) and Murchita ghrita (processed ghee) and to assess the importance of murchana samskara (processing of ghee) by comparing the experimental results of panchatikta ghrita prepared by a murchita ghrita (ghee) and murchita ghrita (processed ghee), the present study was undertaken.[9,10]

Total cholesterol is made up of LDL-Cholesterol, HDL-Cholesterol and a portion of triglycerides and is a risk factor for heart disease. HDL-cholesterol helps to remove the excess LDLcholesterol from the body and has a lot of protein and less cholesterol.



HDL-cholesterol below 40 mg/dl is a major risk factor for heart disease and above 60 mg/dl is protective for heart diseases. LDL-cholesterol causes blockages in arteries and increases the risk of heart attack and stroke. Saturated fats can raise LDL cholesterol, and mono-unsaturated fats can help to lower the amount of LDL cholesterol in the blood. Trans fats lower HDL (good) cholesterol and raise the level of LDL cholesterol in the blood. Triglycerides were increased in panchatikta ghrita prepared using a Murchita ghrita (ghee) group compared to normal control group and panchatikta ghrita prepared using Murchita ghrita (processed ghee) group. Triglycerides are a common type of fat found in the blood and a major source of energy. Triglycerides are the storage form of excess calories. High triglyceride levels are associated with decreased HDL-cholesterol levels and an increased risk of heart disease.[11,12]

Vasa (*Adhatoda vasica* Nees), nimba (*Azhardirakta indica*), guduchi (*Tinospora cardifolia*), kantakari (*Solanum xanthjocarpum* Schrad and Wendl) and patola (*Trichosanthes dioica*) are used as ingredients of panchatikta ghrita. For ghrita murchana samskara (processing of ghee), haritaki (*Terminalia chebula*), amalaki (*Emblica officinalis*), bibhitaki (*Terminalia bellirica*), haridra (*Curcuma longa*), musta (*Cyperus rotandus*) and matulunga (*Citrus medica*) are used as mentioned in bhaishajya ratnavali. These have hypolipidemic and cardio protective properties. These properties of drugs have attributed the hypolipidemic activity of murchana samskara (processing of ghee). Increase in Dodecanoic acid, gondoic acid, oleic acid and unsaturated fatty acids that are expected to contribute to the beneficial effect in increasing HDL cholesterol, in decreasing risk of developing cardiovascular diseases and in reducing the risk of male infertility and growth retardation.

III. RESULTS

The drugs used in ghrita murchana are having katu (pungent), tikta (bitter), kashaya (astringent) rasa (taste), laghu (light for digestion) ruksha (dry) guna (properties), kaphahara doshagnata and lekhaniya (scraping) karma (action). Drugs used in panchatikta ghrita have katu (pungent), tikta (bitter), kashaya (astringent) rasa (taste), laghu (light for digestion) ruksha (dry) guna (properties), katu (pungent) vipaka, ushnaveerya, and kaphahara, tridosahara dosagnata properties. [13]





These guna (properties), karma (action) are attributed the medoharaproperty (hypolipidemic activity) in panchatikta ghrita prepared using murchita ghrita (processed ghee). Murchana samskara (processing of ghee) contributes specific properties in ghrita (ghee) to reduce total cholesterol, LDL, Triglycerides, and to increase HDL. This effect is useful to reduce harmful effects of fats which are considered to play a significant role in atherosclerosis and other cardiac diseases. Hypolipidemic activity in ghrita (ghee) is attributed by the drugs used in panchatikta ghrita and murchana samskara (processing of ghee) having katu (pungent), tikta (bitter), kashaya (astringent) rasa (taste), laghu (light for digestion) ruksha (dry) guna, kaphahara tridoshahara doshaghata, lekhanika karma (action), ushna veerya and katu vipaka.

IV. CONCLUSION

Shamananga snehapana can be safely carried out in patients of Hyperlipidemia. The medohara property (hypolipidemic activity) to panchatikta ghrita prepared with murchita ghrita (processed ghee). Recent studies also show that triphala, musta (*Cyperus rotundus*), haridra (*Curcuma longa*) and matulunga (*Citrus medica*) which are used for murchana samskara (processing of ghee) have hypolipidemic and cardio protective activity. Panchatikta ghrita prepared with murchita ghrita (processed ghee) is therapeutically efficacious than panchatikta ghrita prepared with a murchita ghrita (ghee). Hence bhaishajya ratnavali statement stands scientific and beneficial.[14]

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