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ETIOPATHOGENESIS OF ATHEROSCLEROSIS AND THERAPEUTIC TRIAL WITH SADUSANA CHURNA

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ABSTRACT

A research work was done to evaluate the therapeutic effect of the drug *Sadusana churna* in patients of atherosclerosis. As per inclusion criteria 30 patients of atherosclerosis were selected for the therapeutic trial. The drug Sadusana churna was prepared as per the classical reference and all patients were advised to take 3gm of Sadusana churna twice daily after food with leuk warm water for three months. After 3 months of trial the effect of the drug was found very significant. Also no adverse effects were reported by patients during the study. Hence it can be concluded that Sadusana churna is useful in treatment of Atherosclerosis with relation to lifestyle disorder.

Key words: Atherosclerosis, Dyslipidemia, cholesterol, lipid profile, Sadusana churna.

INTRODUCTION: Lifestyle disorder comes in the first line in the present time due to educated public awareness towards health. In recent times drastic changes have taken place in dietary habits, modes of life style and various regimens of life. Each and every individual is habituated to sophisticated and comfortable life style. There is mark reduction in the trend of physical activities due to rapid industrialization and advancements of science and technology. This results in various metabolic diseases such as diabetes, dyslipidemia, hypertension and obesity etc. Atherosclerosis like condition are arises as a complication of prolong dyslipidemia and leads to various cardiac manifestations like CHD. Now CHD is the major killer disease worldwide. The demand for yoga therapy and natural dietic medicine are increasing day by day. So it needs to search lipid modifying drugs to prevent various lifestyle disorders in present times Ayurveda

Etiopathogenesis of Athrosclerosis: Atherosclerosis is a condition in which an artery wall thickens as a result of the buildup of fatty materials such as cholesterol. Atherogenesis is the developmental process of atheromatous plaques. It is characterized by a remodeling of arteries leading to subendothelial accumulation of fatty substances called plaques. The buildup of an atheromatous plaque is a slow process, developed over a period of several years through a complex series of cellular events occurring within the arterial wall, and in response to a variety of local vascular circulating factors. Pathologically, the lesions progress from:

• Endothelial injury
• Fatty streak
• Fibrotic plaque
• Complicated lesion

smoking, hypertension, diabetes, turbulent blood flow, sheer forces acting on the endothelium, increased fibrinogen, autoimmunity, and even bacteria and viruses have all been implicated as damaging processes. Endothelial dysfunction leads to a series of pathophysiological events:

- The damaged endothelial cells stop making normal antithrombotic and vasodilatory substances such as nitric oxide and prostaglandins.

- Macophages begin adhering to the damaged endothelial surface
- Low-density lipoprotein (LDL) becomes oxidized by the macrophage enzymes.
- Growth factors are released that cause smooth muscle proliferation in the wall of the affected vessel.

The oxidation of LDL is an important step in atherogenesis and results in recruitment of more macrophages to the area that then engulf the oxidized LDL and penetrate into the intima of the vessel. Smoking increases LDL oxidation, and antioxidant vitamins, such as β-carotene and vitamin E, is being studied to see if they can prevent atherogenesis by preventing LDL oxidation.

Once these lipid-laden foam cells accumulate in significant amounts, they form a lesion called a fatty streak. These lesions can reversible with treatment that lowers LDL.

The next stage in atherogenesis involves the incorporation of fibrous tissue and damaged smooth muscle cells into the area overlying the foam cells, forming a cap called a fibrous plaque. The fibroadenoma exacerbates further endothelial dysfunction, necrosis of underlying vessel tissue, and narrowing of the vessel lumen.

In Ayurveda there is no exact correlation for lipid disorder is available but the life style disorder can be correlated with intake of virudha, mithya and ahita ahara vihara. The habit of virudha, mithya and ahita ahara vihara results in jatharagni dusti, then it proceeds to dhatwagni dusti. When it causes vitiation of medo dhatwagni it produces ama containing badhha and abadhha medo. Amayukta abadhha medo in circulating form with sticking properties causes srotodusti and various diseases.

The drug sadusana churna was selected for trial due to its deepana, pachana and lekhana properties to treat Ama, Agni and medodusti.

AIMS AND OBJECTIVES:

1.Therapuetic trial of Sadusana churna on Atherosclerosis

MATERIAL AND METHODS:

Selection of patients: 30 patients of Atherosclerosis were selected with the process of measuring intimal thickness of carotid artery from the OPD/IPD of NIA hospital and SSBH Jaipur. All the cases were registered and recorded with the help of a special proforma prepared for this purpose. Patients were subjected to detailed case history taking, physical examination and laboratory investigations for the study.

INCLUSION CRITERIA:

1. Patients of age group between 16 to 60
2. Patient diagnosed with atherosclerosis.

EXCLUSION CRITERIA:

1. History of cardiac arrest
2. Malignant hypertension
3. Pregnant women
4. Sever systemic illness

Method of preparation of drug: The purchaged drug were identified in the deptt. of dravyaguna & prepaired in the pharmacy NIA Jaipur. The prepared drug Sadusana churna contains Pippali (*Piper longum*), Pippali mula (root of *Piper longum*), chavya (*Piper chaba*), chitrak (*Plumbago zeylanica*), sunthi (*Zingiber officinale*) and Maricha (*Piper nigrum*) in equal ratio.

Method of drug trial: Agroup consists of 30 patient were planned for the therapeutic drug trial. Patients were given 3gms of Sadusana churna twice a day after meal with leuk warm water.

Duration of study: Total duration of study was 3 months with a follow up in every one month for the assessment of improvement and occurrence of any adverse effect.

Diet: All the patients were advised for a genuine restriction of carbohydrate and fatty diet.

Assessment criteria: Under this research work laboratory findings were assessed as follows: USG Carotid artery, lipid profile, fasting blood sugar, blood urea, serum creatinine, SGPT, Hb%, TLC, DLC, ESR of every patient was done before and after treatment.

Statistical analyses for changes in all objective criteria were assessed by p-paired test.

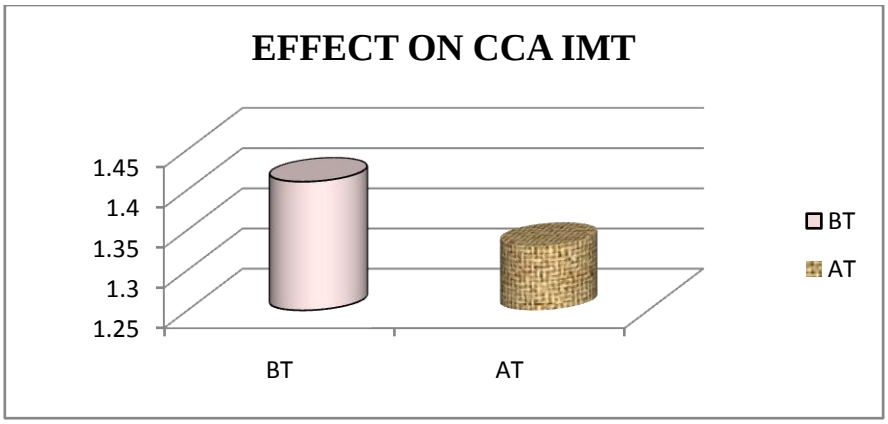
OBSERVATION AND RESULTS:

Under the study of clinical profile of 30 patient was noted it was observed that 50% cases has family history of obese or diabetes or hypertension. Majority number of patients were belongs to vegetarian diet group i.e. 73.33% . sama nidra found in 46.66% patient and 43.33% patients had alpa nidra. Diet habit found among patients were 76.66% had kala bhojana, 20% had akala bhoja and 3.33% had adhyasana habit. 43.33% patient were habituated to Divaswapna. 53.33% patient were practicing mild exercise. 33.33% of tea, 13.33% of smoking, 13.33% of alcohol and 3.33% of Gutka addiction were observed. 36.66% had no such addiction. Work pattern of patients were categorized into three type i.e. mild, moderate and heavy work. Among them mild work and moderate work share 50% each.

After statistical analysis (paired t test) of objective parameters it was observed that, the lipid profiles (Cholesterol, Triglycerides, LDL AND VLDL) of patients were found extremely significant and very significant in HDL after application of Sadusana churna and effect of Sadusana churna on intimal thickness of carotid artery was found to be significant.

Statistical analysis of Role of Sadusana Churna on Intimal thickness of carotid artery

Lab value	N	MEAN		Mean diff	%	SD	SE	't'value	P value	Remarks
		BT	AT							
CCA IMT	60	1.41	1.33	0.073	5.17	0.221	0.028	2.563	0.01	S



DISCUSSION: After completion of therapeutic trial all subjective and objective parameters were analyzed statistically. Observation and results for the current study were prepared from the data of 30 patient. On clinical evaluation

it was observed that there was there was considerable improvement in subjective and objective parameters.

As we studied the lipid profile in patients of Atherosclerosi we found that maximum recovery was seen in LDL with 41.76%. Although the HDL recovery was quit good i.e. 8.27%. As concerned with other lipid there is decrease in triglyceride was 37.27% followed by 33.49% in VLDL and 30.41% in total cholesterol. Statistically the result shows in total cholesterol, triglyceride, LDL and VLDL shows p value <0.0001 means very highly significant and HDL with (p< 0.01) significant effect.

Effect of Sadusana churna on intimal thickness of carotid artery was found to be significant with p value <0.01.

CONCLUSION: Looking at the result it may be concluded that Sadusana churna has a very good effect on Atherosclerosis and other relevant lifestyle disorder. However, further more comprising larger group with longer duration and experimental study on animal will be helpful to reach the more definite conclusion.

REFERENCES:

1.Agnivesha, Charaka Samhita, Acharya Yadavaji Trikamaji, Choukambha publication 2001, Varanasi.

2.Madhavakara, Madhava nidana, shri vijaya rakshita & Shrikanta dutta, Brahmananda tripati, vol-1, Madhukosha, choukambha surbharati prakashana, varanasi, 2nd edition,1998,

3.Maharshi Sushruta, Sushruta Samhita,7thed, Varanasi U.P,Sri DalhanaAcharya Sri Gayadas Acharya, VaidyaYadavaji Trikamaji Acharya Chaukhambha Sanskrit Sansthan, 2002

4.Vagbhatacharya Ashtanga Hridaya Dr Anna Mereshwara kunte, Choukambha publication 2000 Varanasi.

5.Harrison's Principles of Internal Medicine, Charles Wiener, Anthony S. Fauci, Eugene Braunwald, Dennis L. Kasper, Stephen L. Hauser, Dan L. Longo, J. Larry Jameson, Joseph Loscalzo , ISBN, 007149619X / 9780071496193

6.Triglyceride Profile in Dyslipidaemia of Type 2 Diabetes Mellitus Sohail Rafi Khan, Nishat Ayub, Sohail Nawab and Tahir S. Shamsi

7.Anderson JW, Davidson MH, Blonde L, et al. Long-term cholesterol-lowering effects on Psyllium as an adjunct to diet therapy in the treatment of hypercholesterolemia. *Am J Clin Nutr*. 2000a;71:1433-1438.

8. National Cholesterol Education Program. Executive summary of the 3rd report of the National Cholesterol Education Program (NCEP) expert panel on detection, evaluation, and treatment of high blood cholesterol in adults (Adult Treatment Panel III). *JAMA*. 2001;285(19):2486-2497.

9.Nutrition Committee of the American Heart Association. AHA Dietary Guidelines. Revision 2000: A Statement for Healthcare Professionals. *Circulation.* 2000; 102:2284-2299.

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