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PROSPECTIVE CLINICAL STUDY TO ASSESS THE EFFECT OF ATASIBEEJACHURNA (FLAXSEEDS) AS A DIET SUPPLEMENT ON DYSLIPIDEMIA WITH PRANAYAM

Vd. Darshana Gorivale¹ and Vd. Mrudul Chitrakar^{1*}

^{1*}Department of Swathavritta and Yoga, D.Y.Patil deemed to be University school of Ayurveda, Nerul, Navi-Mumbai, India.

ABSTRACT

Dyslipidemia is unhealthy levels of one or more kinds of lipids in blood that are high density lipoprotein (HDL), low density lipoprotein (LDL), triglycerides. LDL cholesterol is considered as the 'bad' types of cholesterol, HDL as the 'good' type of cholesterol, and triglycerides are stored in fat cells, it comes from the calories that we eat. It is major cause for various lifestyle disorders. Which leads the risk factor for atherosclerotic coronary heart disease. Hence as a preventive purpose and with logical approach to dietary intervention with pranayam, this study has conducted to assess the effect of flaxseeds powder as diet supplement with pranayam on serum blood lipid profile of selected dyslipidemia subjects. The study was conducted at D.Y. Patil Ayurvedic hospital Nerul, Navi-Mumbai. 40 Subjects were enrolled according to inclusive and exclusive criteria. Statistical analysis was done with help of paired T test and Mann Whitney which shows ($P < 0.005$) i.e, significant reduction only in serum triglyceride, LDL-cholesterol in group A which was supplemented with roasted Flaxseed powder of 30 gm for 8 weeks with pranayam. On the other hand, non- significant result as ($P > 0.005$) were observed in all the parameter of group B subjects to which only flaxseed powder was incorporated as diet supplement, Thus the study suggests that roasted Flaxseeds powder incorporated as diet supplement with pranayam would be considered as effective agent for lipid lowering purposes if used for longer duration of time.

KEYWORDS

Dyslipidemia, Atasichurna and Pranayam.

Author for Correspondence:

Vd. Mrudul Chitrakar,
Department of Swathavritta and Yoga,
D.Y.Patil School of Ayurveda,
Nerul, Navi-Mumbai, India.

Email: mrudulmlonkar@gmail.com

INTRODUCTON

Dyslipidemia is an abnormal amount of lipids (e.g. Triglycerides, cholesterol and fat phospholipids) in the blood. It can also be stated as increased amount triglycerides, cholesterol or both and decreased level of HDL. Which is the main cause of development of atherosclerosis, leading to increasing rate of mortality and morbidity. Major risk factor associated with atherosclerosis is ischemic heart diseases and cerebrovascular disease.

Dyslipidemia has become current medical as well social problem and its causes often due to diet and lifestyle imprudence.

Omega-3 fatty acids have incredibly positive effects on health and it is benefit for our body and brain. Consumption of dietary omega-3 fatty acids and its derivatives for health benefits has been substantially studied by the scientific, and nonscientific groups in recent years and broad amount of literature has been published on their findings. The hunt for novel high constitution but economic source of protein, energy, fat and antioxidant property has been gaining popularity in developing countries. And also to prevent and control of non communicable diseases like (diabetes, hypertension, dyslipidemia, obesity etc.) through diet is the main concern of the society. Hence the attention has been focused on cheap grains possessing relatively high amounts of protein, rich quality fat, minerals with antioxidant property that can help to amplify the quality of foods of a large amount of population.

Thus flaxseed is one of the grains gaining popularity in this field. As flaxseed is rich in qualities with omega3 fatty acid, alpha linolenic acid, lignans, and also soluble and insoluble dietaryfibres. Many scientific studies shown that flaxseed have key role in reducing cardiovascular diseases by decreasing platelet aggregation. As omega-3 fatty acids include docosahexaenoic acid (DHA) and eicosapentaenoic acid (EPA) are known to influence platelet function, but result was inconsistent. Hence, present study was undertaken to process and incorporated the roasted flaxseeds powder as dietary supplement with pranayam to the dyslipidemia subjects to assess its therapeutic activity.

Yoga is a science which have been practicing since thousands of years. Yoga provides one of the best means of self-energizing life forces and gaining full potential of one's body, mind and soul. Pranayam is one of the important vital elements of yoga that directly or indirectly have the impact on the different system of the body which includes (respiratory system, circulatory system, endocrine system, digestive system). Pranayam also enhances physical, mental and spiritual wellbeing. It has been

proved beyond doubt that pranayama is an intrinsic factor for preventing and curing many diseases.

Aim and Objectives

Aim

To observe the effect Atasibeejachurna on lipid profile with pranayam.

Objectives

- To incorporate lipid lowering therapies as diet supplement.
- To study effect of pranayam in lipid profile.
- Encouraging lifestyle changes to improve blood lipid profile.
- Logical approach to dietary intervention and pranayam.

MATERIAL AND METHODS

Processing of Flaxseeds

Flaxseeds were selected as a source of linolenic acid.

The procured flaxseeds were cleaned thoroughly to remove adhering of dust and foreign matters and roasted in Iron vessel.

Then ground into powder and packed in polythene bags and stored until required.

Methodology

The project have conducted in three levels

Levels

- Literary
- Experimental
- Result

Sampling method

Total 60 subjects screened

Complete study carried out on 40 subjects, on basis of inclusive and exclusive criteria.

Inclusive criteria

- Age group- 18-60 yr
- Sex - male and female
- Subjects with informed consent
- Recently daignose with lipid disorder with
- Moderate level any one of them ranging from as follow-
- Riglycerides - 150-190 mg/dl
- LDL Cholesterol- 130- 160 mg/dl
- HDL Cholesterol- >25 mg/dl

Exclusive criteria

- Patient suffering from major diseases
- Cardiovascular diseases
- Chronic diseases
- Patient who is already on stat in drugs for dyslipidemia
- And lipid level which is exceeding any one of moderate level as mentioned above will be excluded.
- Age group below 18 and above 60

Group A

20 subjects were selected to whom Atasichurna (Flax seed powder) is given with pranayam for consecutive 60 days

Dosage- 30gms in divided doses

Time duration for pranayam:

- Loosening and stretching = approx 4-5 min
- Kapalbhatipranayam = 20 rounds for 3 times approx 4min
- Nadishodhanpranayam = 10 rounds approx; 3 min
- Suryabhedanpranayam=3 min
- Bhramaripranayam =5 rounds ;2 min and Shavasan =3 min

Group B

20 subjects were selected to whom only Atasichurna (Flax seed powder) given for consecutive 60 days

- Dosage- 30gms in divided doses i.e. 15 gm in morning and evening.
- **Place of work:** D.Y.Patil Ayurvedic hospital, Nerul, Navi Mumbai.
- **Type of study:** Two arm open labelled randomized prospective clinical study

Assessment criteria

Objective parameters

- Lipid profile
- BMI (Body mass index)
- Blood pressure
- Weight

Counselling of the patients about the study was done and informed consents were taken from the patients. The study was approved by the Institutional ethical committee. The fasting blood

samples of 5 ml were collected to estimate the lipid profile. The patients were divided into two groups: One group received flaxseed powder 30gm with pranayam for consecutive 60 days another group received only roasted flaxseed powder 30gm for 60 days.

Patients were advised to come after overnight fasting and blood samples were collected in early morning.

All the parameters of lipid profile were estimated before and completion of study i.e after 60 days.

The changes on the lipid levels of each group before and after supplementation were observed and statistically analysed using paired T-test and Mann Whitney test was applied.

All values expressed as mean in mg/dl \pm standard deviation. Statistical significance of difference between the base line serum lipid level for both the group was performed.

RESULTS AND OBSERVATIONS

Demographic view on observation

AGE

In the present study it was observed that

In group A: there are 4 subjects (20%) were 25-40 years, 7 subjects (35%) 41-50 years, 9 subjects (45%) of 51-60 years.

In group B: there are 2 subjects (10%) were 25-40 years, 10 subjects (50%) 41-50 years, 8 subjects (40%) of 51-60 years.

Gender: In the present study it was observed that

In group A: 9 subjects (45%) were male and 11 subjects (55%) were female.

In group B: 10 subjects (50%) were male and 10 subjects (50%) were female.

DIET: Dietary habit observed were-

In group A: 8 subjects (40%) consumed veg and 12 subjects (60%) consumed mixed diet.

In group B: 9 subjects (45%) consumed veg and 11 subjects (55%) consumed mixed diet.

Prakruti

It was observed that-

In group A- 8 subjects were kapha- pitta prakruti, 7 subjects vata- pitta, 5 subjects vata- kapha.

In group B- 10 subjects kapha- pitta prakruti, 7 subjects vata- pitta, 3 subjects vata- kapha.

DISCUSSION

- The present study has been undertaken to demonstrate the effect of flax seed powder as diet supplement with pranayam on lipid profile, In patients who is newly diagnosed with dyslipidemia condition.
- In this study lipid profile was done for all dyslipidemia patients, that has been enrolled for study and repeated after completion of study i.e. after 60 days.
- According to statistical evaluation, significant changes were observed in LDL-cholesterol, and triglyceride level in group A(Flax seed powder as a diet supplement with pranayama) and not observed in all the other parameters of lipid profile in both the groups.
- In blood investigations changes were observed before and after in (triglycerides, LDL, HDL, Cholesterol Ratio of Total cholesterol/ LDL) in both the groups.
- It is well documented that elevated total cholesterol and low density lipoprotein cholesterol (LDLc) levels promote atherosclerosis and cardiovascular complications.
- Hence, roasted flaxseed powder can be used as a dietary supplement for the prevention of diseases cause due increase level of lipid ranges and to maintain levels of lipid profile, of newly diagnosed dyslipidemia in borderline ranges.
- So it is concluded that duration of flax seed administration or dose of administration if increase may give better result.
- Also it can be stated that pranayam have positive and useful effect on certain cardiovascular risk factors viz, obesity, hypertension and dyslipidemia, by reducing its stress factor.
- This type of Indian life style modification (yoga, exercise, proper diet) if properly done for a sufficient time will go long way towards beneficial modification of coronary risk factors viz, obesity, hypertension and dyslipidemia, decreasing mortality rate and maintaining the health.

Table No.1: Paired T test for Group A

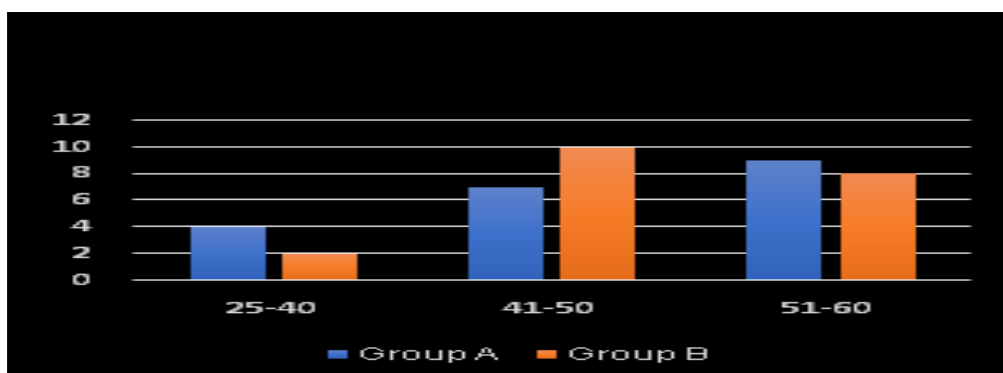
S.No	Variables	BT/AT	Mean	SD	SEM	t	p	RESULT
1	cholesterol	BT	214	32.75	2.513	1.393	0.1797	not significant
		AT	210	35.37				
		Diffe.	3.5	11.24				
2	Triglycerides	BT	138.85	53.51	3.048	2.149	0.0448	significant
		AT	132.3	59				
		Diffe.	6.55	13.63				
3	LDL	BT	142.85	18.43	1.894	2.138	0.0457	significant
		AT	138.8	21.52				
		Diffe.	4.05	8.47				
4	HDL	BT	38.6	7.46	0.7473	1.74	0.0981	not significant
		AT	39.9	8.38				
		Diffe.	-1.3	3.34				
5	VLDL	BT	27.83	10.7	0.6156	2.047	0.0548	not significant
		AT	26.57	11.95				
		Diffe.	1.26	2.75				
6	Total CHOL/HDL Ratio	BT	5.78	1.97	0.1619	0.8336	0.4148	not significant
		AT	5.64	1.79				
		Diffe.	0.14	0.72				
7	weight	BT	82.1	12.4	0.3858	1.685	0.1084	not significant
		AT	81.45	11.66				
		Diffe.	0.65	1.73				
8	BMI Diffe. 0.27 0.64	BT	31.2	4.69	0.1433	1.849	0.0801	not significant
		AT	30.93	4.61				

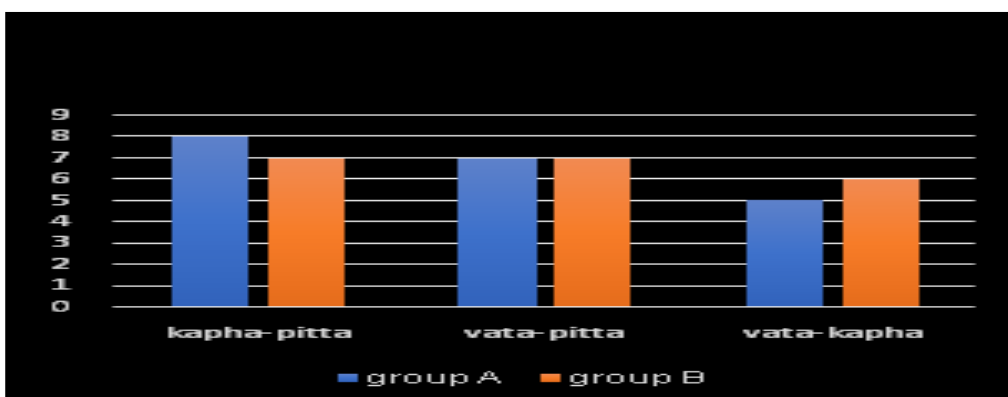
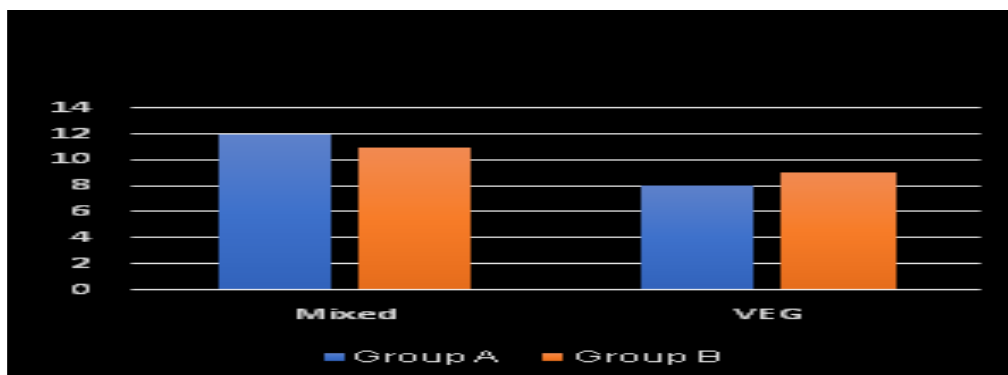
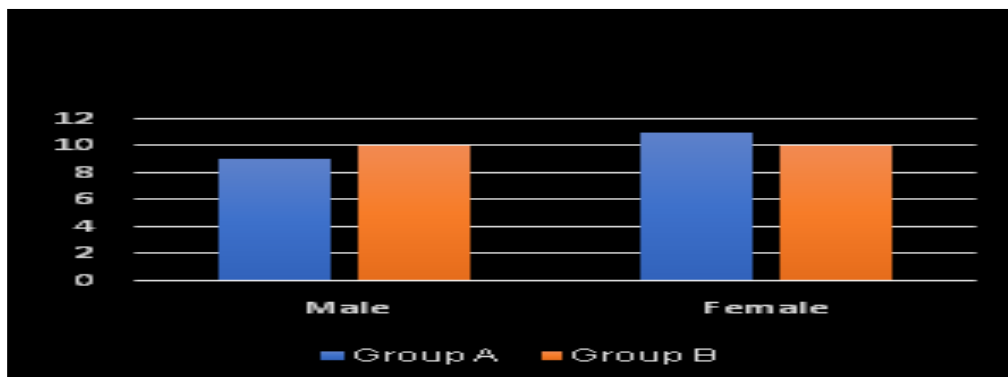
Table No.2: Paired T test for Group B

S.No	Variables	BT/AT	Mean	SD	SEM	T	p	RESULT
1	cholesterol	BT	211.95	39.57	2.128	0.188	0.8529	Not Significant
		AT	211.55	39.78				
		Diffe.	0.4	9.52				
2	Triglycerides	BT	129.7	42.43	6.706	0.07456	0.9413	Not Significant
		AT	130.2	58.04				
		Diffe.	-0.5	29.99				
3	LDL	BT	144.45	24.23	2.24	1.428	0.1694	Not Significant
		AT	141.25	20.74				
		Diffe.	3.2	10.02				
4	HDL	BT	39.55	10	0.5351	2.616	0.017	Not Significant
		AT	39.95	10.3				
		Diffe.	-1.4	2.39				
5	VLDL	BT	25.48	8.15	3.014	0.9656	0.3464	Not Significant
		AT	28.39	15.45				
		Diffe.	-2.91	13.48				
6	Total CHOL/HDL Ratio	BT	5.62	1.41	0.135	0.3703	0.7153	Not Significant
		AT	5.57	1.33				
		Diffe.	0.05	0.6				
7	weight	BT	71.8	9.62	0.2938	1.361	0.1893	Not Significant
		AT	71.4	9.9				
		Diffe.	0.4	1.31				
8	BMI	BT	28.3	3.5	0.1352	0.111	0.9128	Not Significant
		AT	28.28	3.67				
		Diffe.	0.02	0.6				

Table No.3: Comparison between groups by Mann Whitney test

S.No	Variables	t	P	Results
1	Cholesterol	0.9415	0.3524	Not Significant
2	Triglycerides	0.9571	0.3446	Not Significant
3	LDL	0.2898	0.7736	Not Significant
4	HDL	0.1088	0.9139	Not Significant
5	VLDL	1.356	0.1832	Not Significant
6	Ratio	0.4031	0.6891	Not Significant
7	Weight	0.5156	0.6091	Not Significant
8	BMI	1.269	0.2122	Not Significant





CONCLUSION

In the present study, a pin point conclusion cannot be drawn as according to statistical analysis non-significant result observed in both the groups except (significant reduction observed in serum LDL-cholesterol, and triglyceride level of group A). So it can be suggested that roasted flaxseed powder incorporated as dietary supplement with pranayam for longer duration may give good result for lipid lowering measures.

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CONFLICT OF INTEREST

We declare that we have no conflict of interest.

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