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Impact of Flaxseed Consumption on Dyslipidemia

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Aim: The Present study is design to evaluate the effect of flaxseed consumption on lipid profile.
Methodology: Dyslipidemia subjects were selected and encouraged them to take 25gms of flaxseeds in their diet, anthropometric and biochemical parameters were collected before and after completion of study period.
Conclusion: By This study we are conduting that the intake of flaxseeds shows a significant reducation of the serum lipid($p<0.001$) i.e: triglycerides, total cholesterol, low density lipioproteins.
Keywords: Dyslipidemia, Flaxseeds, Coronary Heart Diseases, Polyunsaturated Fatty Acids, Blood Pressure.

Introduction

Coronary heart disease(CHD) is a leading cause of morbidity and mortaliy in developed contries. these in the higher socioeconomic groups are the first ones to adopt to an adverse life style such as sedentary life style and intake high saturated fatty acids diet, cigarette smoking. They are also the first to revert to a healthier life style. Saturated fatty acid raise the levels of LDL and total blood cholesterol level. Both of these effect increases the risk of CHD. The activity of LDL receptors its ability to mediat the entry of LDL appears to be suppressed by saturated fatty acids. When LDL receptor activity decreases, LDL catabolism decreases and blood levels of LDL increases. Parallel changes in life style and diet have led to an increase in life expectancy and a greatly increases burden of CVD and other chronic disese.

Dyslipidemia is one of the modifiable risk factors of CHD, charaterised by high triglycerides(TG), decreased high density lipoprotein cholesterol(HDL-C), increased lipoprotein cholesterol(LDL-C)and increased lipoproteins(LPa). LPa provides a carrier syatem for low de4nsity lipoprotein cholesterol facilitating cholesterol accumulation in cells. Blood concentration of antioxidants affects the susceptibility of LDL and lipoprotein(a) at oxidation, because it is the oxidation LDL that attracts circulating monocytes which then adhere to the arterial wall forming atherosclerotic plaque. Decreased level if these substance that protect against oxidation increase atherosclerotic risk. Although flaxseed act as a antioxidant , as flaxseed contasin all sorts of healthy components and owes its primary health reputation to there of them: omega 3 fatty acids, lignans, fiber. Researchers at the lowa state university nutrition and wellness research center found that cholesterol level lowered among men who included flaxseed in their diet. While flaxseed shown to reduce evidence that flaseed and flaxseed oil may lower cholesterol levels. hence the present study aims to investigate the effect of flaxseed consumption on dyslipidemia

Methodology:

In the present study 75 dyslipidemic subjects in the age of 40-60years were recurtited. Dyslipidemic subjects with elevated levels(triglycerides, total cholesterol, LDL, HDL) who were visited hospital for first time as a regular health check ups. The methodology consisted a pre tested questionnaire for the subjects to collect general information, nutritional status i.e: height, weight, bmi, blood pressure, and other health issues, dietary pattern and life style. At the beginning of the study baseline values for blood pressure, body weight and BMI were recorded. Blood samples were collected from the selected subjects for triglycerides, total cholesterol, high density lipoproteins, low density lipoproteins was estimated by different procedures. After completion of supplementation period estimation of blood lipid profile, measurement of BMI was done.

Result:

Mean reduction of 2.89% of body weight was noiced in the selected subjects. A significant difference($p<0.01$) in the baseline and final value of the body weight and BMI of the subjects were observed. A significant decreased in the both systolic and diastolic blood pressure.

Table I
Effect of flaxseeds consumption on anthropometric and bloop preasure measurements

Parameters	Before	After	Mean changes %	P value
Body weight	76.12	73.92	2.89	0.000
BMI	28.48	27.61	3.05	0.000
Systolic blood pressure(mm of hg)	135.76	134.56	0.88	0.044
Diastolic blood pressure (mm of Hg)	88	86	1.910	0.034

Table II
Effect of flaxseed consumption on lipid profile

Parameters	Before	After	Mean changes %
Total cholesterol	266.8	223	16.19
Triglycerides	192.68	165.7	13.9
HDL	37.2	39.1	4.94
LDL	134.6	107.8	19.93
VLDL	47.48	38.96	17.94

There is a singnificant reducation in the lipid profile by the supplementation of the flaxseeds for the period of 3 months in their diet.

Discussion

Dyslipidemia is a state tha accelerate the beginning and development of atherosclerosis. Dyslipidemia can often be prevented or treated with life style management and proper nutrition. After supplementation of flaxseeds to dyslipidemic subjects indicated that interventions was well tolerated by subjects and the dropout rate was minimum. In the present sstudy supplementation of flaxseeds to dyslipidemic subjects resulted in a significant decreases in body weight, BMI, systolic and diastolic blood pressure.

Regular intake of flaxseed in their diet of dyslipidemic subjects brought significant fall in the blood pressure, which is may be attributed to the pressure of PUFA, mainly ALA, soluble fiber, Lignana precursors and estrogen in flaxseeds. Intake of flaxseeds exhibited anti- hyperlipidemic effect conclusion of the highly significant reducation in total cholesterol, TG, LDL, VLDL levels and elevated HDL levels.

By our findings we are concluded that intake of regular flaxseeds shows the beneficial effect on the lipid profile and cardiac health.

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