ORIGINAL RESEARCH PAPER

Home Science

"NUTRITIONAL ASSESSMENT OF CARDIOVASCULAR DISEASE IN THE AREAS OF VISAKHAPATNAM"

KEY WORDS: CVD, Hypertension, CAD.

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ABSTRACT

Cardiovascular disease (CVD) is one of the most leading causes for morbidity and mortality in the worldwide. Age and other genetic factors are not only primarily responsible other factors including diabetes, hypertension lifestyles are some of the major risk factors associated with CVD. The study was designed to understand the nutritional status of the cardiovascular disease. The present study was an observational study which was carried out in Pinnacle hospital Arilova in Vishakhapatnam Andhra Pradesh. The study was designed to investigate the impact of nutritional status of cardiovascular disease patients in the age group of 40 to 70 years. A total of 100 samples were taken and the data was gathered through qualitative methods like questionnaire and interview methods. Anthropometric measurement, Biochemical parameters, clinical parameters, dietary intake was assessed by 24hours recall method and diet counselling was given. Among 100 samples 76 were male and 24 were female, stated physical status of the sample's states that majority of the samples go for walking (25%) everyday, 27% twice a week. 12% once a week and 36% never go for any physical activity. Majority of the samples (52) suffer from hypertension, (42) with atherosclerosis, (25) samples with myocardia infraction and 18 with angina pectoris, 8 with rheumatic heart disease and 4 with stroke. The study concludes the prevalence of hypertension, kidney disorders and diabetes are increasing with increase in CVD, the sedentary lifestyle and lack of physical exercise was one of the major route causes for CVD. High consumption of saturated fatty acids leads to obesity. Consumption of good dietary habits along with medication with physical activity helps in prevention and treatment of CVD.

INTRODUCTION

Cardiovascular disease (CVD) is one of the most leading causes for morbidity and mortality in the worldwide. Age and other genetic factors are not only primarily responsible other factors including diabetes, hypertension lifestyles are some of the major risk factors associated with CVD.(1) CVD is defined as a disease which affects the arteries and the blood vessels of the heart. It is one of the major effects of atherosclerosis in arteries. CVD is now turning to be a major leading global mortality in present and later situations. (WHO, 2009e). (2)

The risk factors are highly associated and responsible for cardio vascular disease which includes lack of physical activity, stress, obesity and dietary patterns. These factors play a role in elevating the risk of getting CVD. (3-5). Family history of CVD is associated with increase in atherosclerosis risk which leads to heart disease.(6)Functional changes may be observed due to complex reason, like changes in strength of muscles which effects the impairment of physical activity. (diet) Even studies say the psychological factors have indirect influence on the risk of CVD by kind of food consumption, alcohol, stress and cigarette smoking. Anxiety, depression, impatient can cause a greater effect on heart and its vessels.(7,8)

CVD compromise of spectrum of disease associated with disorders of heart muscles, disorders of circulation leading to coronary artery disease, ischemic heart disease, atherosclerosis, hypertension myocardial infraction. (9,10) The common causes associated with CVD diabetes mellitus, stroke, ischemic attack, vascular disease.(11) High intake of saturated fatty acid, alcohol and cholesterol in the diet leads to high risk factors of CVD associated which worsening of kidney disease, long term mortality and prolonged wound healing. (12-15)

Evidences from various studies suggest PFA have a significant role in prevention of CVD. (16). Dietary sources such as olive oil, fish oils, highly rich in eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA), for prevention.(17) Studies says high fibre diet are more beneficial with possible metabolic effects on inflammatory markers.(18) Recommendation on increase in intake of whole grain and dietary fiber, fruits, vegetables decreases the risk of Cardiovascular disease.(19,20)

OBJECTIVES:

1. To know the socio-economic status of the subjects.
2. To evaluate the risk factors of cardiovascular disease.
3. To know the physical activity of the subjects
4. To observe the food consumption and nutrients intake of cardiovascular patients.

METHODOLOGY

The present study was conducted on an observational method from the department of cardiology Pinnacle hospital, Arilova, Visakhapatnam. The study was designed to assess the nutritional status of cardiovascular disease patients attending op on regular basis. The targeted age group between 40-70 years. The total number of samples were recorded as 100. A structured questionnaire was developed to gather all the primary data regarding age, gender, socio economic status and nutritional status. Interview was also scheduled and diet counselling was given to the samples.

The Inclusion criteria of the samples with any cardiovascular disease, Both male and female. The Exclusive criteria of the samples were all pregnant women, any disease related to serious health issues. All the data regarding socio economic status like monthly income, education, physical activity, occupation was recorded. Anthropometric measurements like height and weight were taken and BMI was calculated to categorize the grades of obesity. Clinical assessment, samples were interviewed on physical examination and related problems and it's been recorded.

Dietary assessment samples were interviewed on consumption of food by using 24hour recall method, food questionnaire was recorded. Patterns of consumption of food,

likes and dislikes were noted. Addictions like drinking alcohol, cigarette smoking and physical activity were noted down. The primary data was entered in Microsoft Excel spread sheet, and the variables were analyzed by using mean, frequency, standard deviation.

RESULTS

A hospital-based study observed in 100 samples with cardiac issues with the age limit of 40-70 years, in the cardiology department of Pinnacle hospital.

Socio-economic background:

Among total 100 samples, 76 males and 24 females were taken, among these 63% males and 54% female belong to the age group of 50-60 years, educational status of the samples 33% of males and 11% of females were illiterate, 40% males and 8% of females were graduated. Occupation status of the samples is clearly stated 42% of the samples were working in various organization, 28% of the samples were into farming, 24% of the sample get they daily wages like auto drivers, 6% of the samples were into teaching field. Income status of the samples states 42% belongs to her income above 10,000-20,000,29% belongs to between 5000-10,000, 29% belongs between 40,00-50,000. The data was gathered to understand the educational and economic status which helps to evaluate they life style and dietary patterns.

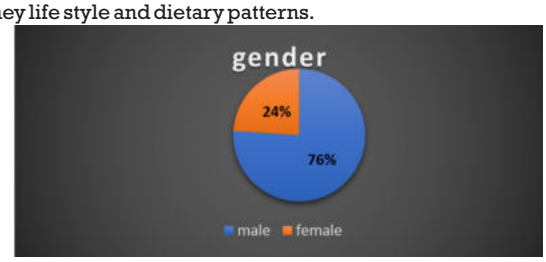

Fig 1: Gender distribution of CVD samples

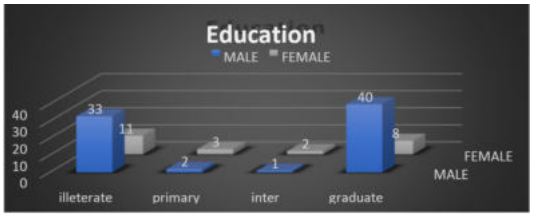

Fig 2: Education distribution of CVD samples

Risk factors of cardiovascular disease:

The table represents the distribution of cardiovascular disease among patients. Majority of the samples (52) suffer from hypertension, (42) with atherosclerosis, (25) samples with myocardia infraction and 18 with angina pectoris, 8 with rheumatic heart disease and 4 with stroke. Among 100 samples the stages of hypertension were recorded in which Majority of the samples (36%) belong to stage 1 hypertension, 27% belongs to stage-2, 25% belongs prehypertension and 22% belong to normal after medication. Majority of the samples 71% have no past family history of cardiovascular disease and 29% of the samples detected with past family history of cardiovascular disease. Table clearly states the risk factors associated with cardiovascular disease among the samples, the highest risk shows 33% with diabetes mellitus, 26% with obesity, 24% 2ith kidney disease, 16% drinks alcohol, 28% smokes and 5% chew tobacco.

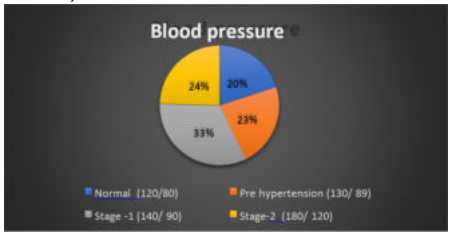

Fig 3: levels of blood pressure of CVD samples

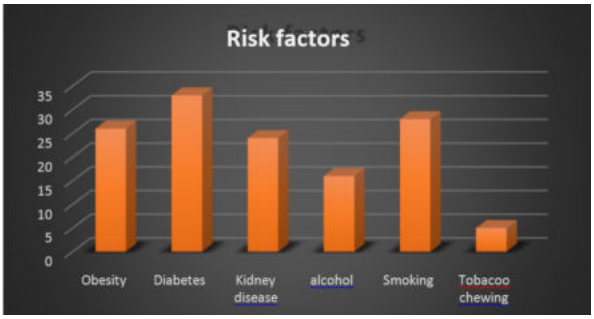

Fig4: Risk factors associated with CVD samples

Table 1: Distribution of CVD in samples	
Types of CVD	frequency %
Atherosclerosis	42
Hypertension	52
Myocardial Infarction	25
Angina Pectoris	18
Rheumatic Heart Disease	8
Stroke	4

Physical activity:

Table clearly states that 26% of the samples are in obese condition, 20% were overweight, 50% are normal in weight and 2% were underweight especially female samples belongs to underweight. Physical status of the sample's states that majority of the samples go for walking (25%) everyday, 27% twice a week. 12% once a week and 36% never go for any physical activity. The samples were recorded for weight loss after physical exercise and diet pattern the table explains 2% with weight gain and 26% with weight loss and 72% with no change.

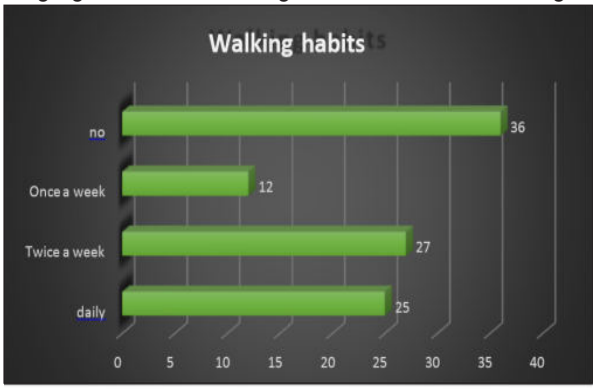

Fig 5: Life style Physical Activity in CVD samples

Dietary assessment:

Dietary assessment records 86% of the sample were non vegetarians and 14% of samples depend on vegetarian diet. From the food frequency questionnaire its recorded 94% of sample consume cereals as their staple food, 30% consume pulses in their daily schedule, 78% consume milk daily, 35% consume green leafy vegetables, 25% consume fruits and 30% of nuts and seed (soaked almond) on daily bases. Cereals was one of the most important food consumed by all the CVD samples, either once or twice, but meat and fish product 34% samples never consume and majority of the samples 58% consume meat twice a week. 49% consume pulses twice a week, 19% consume green leafy vegetables, 13% nuts and seed, 33% consume fruits, 58% meat and fish products were consuming twice a week. Study reveals 13% of samples suffer from constipation due to lack of fiber in the diet and 18% skip meal due to various cultural practises and myths. Pattern consumption of RDA and actual intake varies, its clearly stated in the study 79% consume recommended carbohydrate, 91% consume recommended energy intake, 50% consume recommended protein intake, and 24% consume recommended fat to actual intake of RDA.

Table 2: Food frequency questionnaire					
Variables	Daily	1 time/ week	2 time/ week	3 time/ week	Never
Cereals	94	6	0	0	0
Pulses	30	2	49	15	4
Leafy vegetables	35	10	19	22	14
Nuts and seeds	30	6	13	25	26
Fruits	25	5	33	25	12
Meat and poultry and sea foods	0	0	58	8	34
Milk and milk products	76	0	0	0	24

DISCUSSION

According to Lowler et al. (2001), (21) males proved to have more incidence rate, mortality rate and prevalence compared to female. To compare with the present study, males proved to be more prevalent to females.

One of the major risk factors to be noted as family history. (Nelms, 2003) (22) comparatively to present study past family history shows 29% and 71% with no family history, which is evident factor was not associated to risk factor.

Many studies proved less physical activity increases the risk factor of mortality, (Andersen, 2000) (23) and the present study states 25% goes for regular walking which is a believable risk factor for cardiovascular diseases. Vuori IM (2001) (24) regular, moderate physical activity reduced risk of CHD, cerebrovascular disease, hypertension, maturity onset diabetes, overweight and obesity, and osteoporosis.

Catherine and Chia-ling (1995), (25) results were demonstrated by who concluded that educational will improves health indirectly through working and socio-economic conditions, and health lifestyle. The present study 48% males, 85 females were graduated, which has a greater impact of the life style changes and dietary changes.

Rattan Kaur Chawla et.al (2013) (26) Risk factors of CVD to be compiled as 74.3% to be hypertension 37.6% diabetic and 41.6% genetic factor of the patients. 67.3% using ghee as saturated fat. 86.1% physically inactive and 10.9 smokers. The causes of vascular injury and stress to myocardium to be the major risk factor for cardiovascular diseases (Castelli, 1984; Nelms, 2003) (27). Present study 52% with hypertension, 33% with diabetes, 42% with atherosclerosis, 16% drink alcohol reveals hypertension and diabetes is major risk factors in cardiovascular disease.

CVD in diabetics is the cause of morbidity and mortality (Thomas et al., 2003). (28)

Fung et al., (2009) (29) abundance of fruits, vegetables, whole grain cereals, nuts, and legumes; olive oil as the principal source of fat supported that traditional Mediterranean dietary pattern is protective against CVD; moderate consumption of fish and lower consumption of red meat. From the present table it's clear that majority of samples consume green leavy vegetable, fruits, and meat twice a week and consume cereals as their staple food with protein food which protects against CVD. King DE (2005) (30) Recent cohort studies protective effect of dietary fiber on CVD, prompting organizations to increased fibre in the day-to-day lives.

CONCLUSION

The study concludes that more prevalence of cardiovascular disease is observed in male than female. And the mean age group is 55 years. The prevalence of hypertension, diabetes mellitus, atherosclerosis was higher among samples which increases the risk factors of cardiovascular disease. Maximum of the samples having sedentary life style and majority were overweight which increased risk of CVD. Lack of daily physical activity leads to overweight. The consumption of moderate amount of protein and increase amount of saturated fat increases the risk of CVD. The study concludes counselling on healthy dietary patterns, meeting required RDA and encouraging physical activity with regular monitoring of health condition can decrease the risk of cardiovascular disease.

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