

A Study on Food Habits and Social Habits as Risk Factors among Patients Undergoing Percutaneous Transluminal Coronary Angioplasty (PTCA)

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ABSTRACT

AIM:

A study on food habits and social habits as risk factors among patients undergoing Percutaneous Transluminal Coronary Angioplasty (PTCA)

OBJECTIVE: To know the association of food habits and social habits as risk factors for PTCA.

- To observe various co-morbidities among the patients
- To study the bio-chemical parameters in patients such as hemoglobin, PVC, platelet count, bilirubin levels.
- To observe various social habits in the patient, such as smoking and alcohol consumption.
- Food consumption pattern.

METHODOLOGY:

The sample population [n = 60] of 28-80 years of age were chosen from a multi speciality hospital in Hyderabad. All the patients were of different age groups, sex, socio-economic status, ethnicity with different co-morbidities. A pre-tested format consisting of patients profile, subjective data, objective data, biochemical data, medications and 24 hour dietary recall followed by medical nutrition therapy during the hospital stay.

RESULTS:

Among [n=60] subjects from 28-80 years of age, the detailed study identified the common risk factors with respect to cardiovascular diseases. The study showed a higher percentage of age from 28-70 years and is mostly in males. Majority of the patients are with increased BMI and are alcoholics/smokers. Obesity, Hypertension and Diabetes are predominant and dietary patterns recorded are mostly non-vegetarians with high calorie, high fat and high protein consumption.

CONCLUSION:

From the result it is very clear that majority of the patients studied with cardiovascular diseases belong to the age group 28-70 years and is mostly seen in males. Majority of them are accompanied with co-morbidities with obesity, hypertension and diabetic. And predominantly follow a high calorie and high fat diet. Thus leading to a conclusion that consumption of high calorie and high fat food, presence of co-morbidities and smoking could be the risk factors of PTCA.

KEYWORDS: Cardiovascular diseases, cardiovascular surgery – PTCA, obesity, hypertension, diabetes, alcoholism, smoking and diet- high fat food.

INTRODUCTION

Cardiovascular disease (CVD) is the name for the group of disorders of heart and blood vessels, and include: hypertension (high blood pressure) coronary heart disease (heart attack) cerebrovascular disease (stroke)

➤ CVDs are the number one cause of death globally: more people die annually from CVDs than from any other cause.

- An estimated 17.3 million people died from CVDs in 2008, representing 30% of all global deaths. Of these deaths, an estimated 7.3 million were due to coronary heart disease and 6.2 million were due to stroke.
- Low- and middle-income countries are disproportionately affected: over 80% of CVD deaths take place in low- and middle-income countries and occur almost equally in men and women.

- By 2030, almost 23.6 million people will die from CVDs, mainly from heart disease and stroke. These are projected to remain the single leading causes of death.[WHO]
- CVD have a major share in the incidence of non-communicable diseases and is also one of the leading cause of death in India. It has out grown the boundaries of gender, location of dwelling, studies show an increased prevalence of CVD in India as compared to other developing countries with recent trends showing incidence in younger age group's.
- According to recent statistics, 31% of global deaths, takes place every year by CVD'S . Tobacco / smoking , unhealthy diet ,physical inactivity &the harm full use of alcohol .
- 17.9 million deaths world wide out of which >75% of deaths are low income & middle income countries and 85% of deaths are due to heart attacks and strokes [WHO].
Overall CVD contributed 28.1% of total deaths in India in 2016 , were among the people younger than 70 years with higher proportion leading an overlapping risk factors.

CVD death rate 272 per 100 000 population in India is higher than the global average of 235 per 100 000 population in 2016.

It is seen to affect all sections of the society from young to old and most affluent to least affluent as the large scale and widespread incidence shows downgrading of the Cardiovascular health. Status of Indians and emergence of CVD as a chronic manifestations across the population. Thus by effecting the country's productivity owing to economic burden in an otherwise unbeneficial phase of demographic transition of the country , thus indicating the need for urgent policy and health system response appropriate for the situation in country .

OBJECTIVES

- To observe various co-morbidities among the patients undergoing PTCA.
- To study the bio-chemical parameters in patients undergoing PTCA like haemoglobin, PVC, platelet count, bilirubin levels.
- To observe various social habits in the patients undergoing PTCA such as smoking and alcohol consumption.
- Food consumption pattern- high calorie, high protein and high fat foods.

THE RISK FACTORS FOR CARDIOVASCULAR DISEASES ARE:

A. MAJOR MODIFIABLE RISK FACTORS:

- High blood pressure
- Abnormal blood cholesterol
- Tobacco use (smoking and chewing)
- Diabetes mellitus
- Obesity
- COPD and reduced lung function
- Arteriosclerosis
- Physical inactivity
- Unhealthy dietary patterns.

B. OTHER MODIFIABLE RISK FACTORS:

- Low socio economic status

- Alcohol use
- Mental health
- Psychological stress
- Use of certain medication

C. NON MODIFIABLE RISK FACTORS:

- Advancing age
- Hereditary of family history
- Gender
- Ethnicity or race

D. OTHER RISK FACTORS:

- Dietary risk 56.4%
- High systolic blood pressure 31.1%
- High total cholesterol 29.4%
- Tobacco use 18.9%
- High body mass index 14.7%

REVIEW OF LITREATURE

Cardiovascular diseases (CVD) is an umbrella term for a number of linked pathogens, commonly defined as a coronary heart disease(CHD), cerebrovascular disease, peripheral arterial disease, rheumatic and congenital heart disease. Globally CVD accounts for 31% of mortality of this in the form of CHD and cerebrovascular accidents.[1]

According to world health organization [WHO], CVD will be the number one cause of morbidity and mortality in the world by the year 2015, and is assumed that Indians would be the most affected amongst all ethnic population. There are various factors involved for rapid increasing of the CVD's. cardiovascular mortality in Asian India population is likely to climb up to 93% in men and 90% in women.[2]

Cardiovascular disease [CVD] mortality and morbidity has been shown to be elevated in individuals who are overweight [obese], particularly with central deposition of adipose tissue. Abdominal obesity has been shown to be a risk factor for CVD worldwide. Obesity may be associated with diabetes and hypertension, all of which increase the risk of CVD events.[3]

High cholesterol increases the risk of developing the CVD's . About 45% of medi care beneficiaries have high cholesterol, making it the second most common condition among all the medical office encounters.[4]

The prevalence of severity of hypertension [HTN] increase with increasing BMI . Obesity is characterized by various metabolic abnormalities including increase in circulating blood volume which contribute to the development of HTN. [5]

Hypertension is quantitatively the most important risk factor for premature CVD. It is most common in people with social habits like alcoholism and smoking , diabetes which is the other major risk factor. HTN accounts an for an estimated 54% of all strokes and 47% of all heart disease events globally.[8]

Obesity can lead to a variety of other cardiac problems. The risk factors of developing heart failure was twice as high in patients with a BMI greater than 30 as compared to non-patients with obesity, which can subsequently cause the heart to undergo volume overload by putting further strains on its capacity to work .[6]

Adipose tissue [loose connective tissue] promotes the development of atherosclerosis. This is a hardening of the arteries believed to be an inflammatory disorder. This process can damage heart cells, inevitably leading to replacement of healthy heart cells to fat cells. [7]

Diabetes is a major risk factor for CVD, and is the most common type of death in people with diabetes. It was found that diabetes was associated with significantly higher mortality, and in-stenting. [10]

For various reasons, stress, anxiety, and depression are factors that negatively affect the patients' recovery and quality of life. Myocardial infarctions and sudden death is 3 to 6 times more in anxious patients compared to the normal population

Most of the time those who are stressed, anxious and depressed show severe systematic reactions to stressors and experience an elevated heart rate and blood pressure as a result, the hearts demand for blood and oxygen and lead to severe ischaemia .leading to depressed patients, the incidence of hypertension, diabetes mellitus ,and hyperlipidemia, each of which is considered as a risk factor for cardiac disease.

Stress and anxiety delay the period of adjustment to cardiac disease, and negatively affect the patients' quality of life. Anxious patients are less able to adjust with the change of their lifestyle and diet, adhere to administered drugs and treatment, and regulate the amount of appropriate physical activities persists it would lead to the severity of signs and symptoms, more physical disability, poor performance, and postponing the preparation for returning to their jobs and usual social activities.[9]

There is no proven benefit in implanting a stent in a blockage that does not impair blood flow to the heart muscle. **These blockages require only medications and lifestyle changes to treat successfully.** [11]

The effectiveness of lifestyle interventions within secondary prevention of coronary heart disease (CHD) remains unclear, with respect to educational, psychological, dietary, organizational, and exercise. The overall results for modifiable risk factors suggested improvements in dietary and exercise outcomes but no overall effect on smoking outcomes. In trials that examined mortality and morbidity, significant benefits were reported for total mortality .Thus, disease prevention measures have been designed to focus on a range of lifestyle factors.[5]

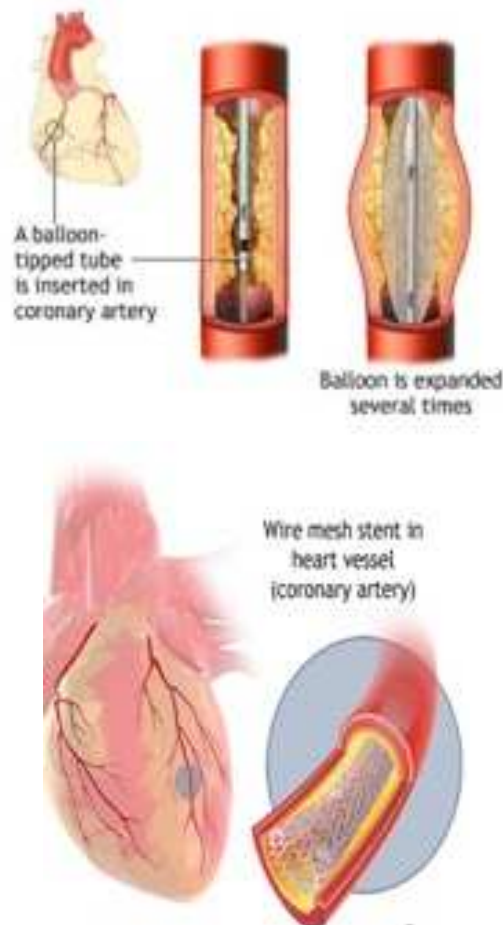
Reduction in body weight and blood pressure, and in increased physical activity. Furthermore, nutritional habits and less fat intake, and body composition changed towards a higher proportion of fat-free mass and also intensified lifestyle modification is able to reduce the need for further revascularization procedures after PTCA in patients with CAD. [12]

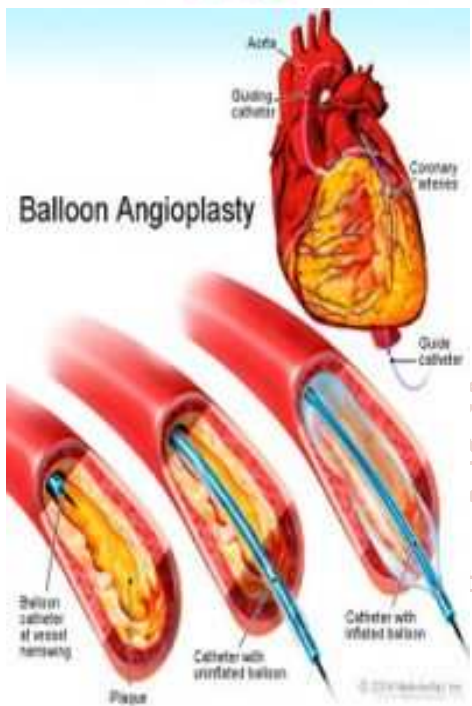
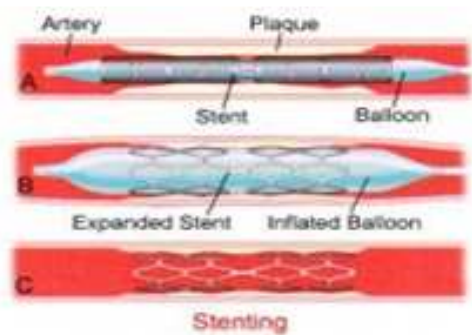
Smoking has been estimated to cause about 11% of all deaths due to CVD as it contributes to the pathogenesis of CVD and sudden death through a variety of mechanism, including the promotion of atherosclerosis, through reduction capacity of blood to deliver oxygen.[15]

Stress and anxiety delay the period of adjustment to cardiac disease, and negatively affect the patients' quality of life. Anxious patients are less able to adjust with the change of their lifestyle and diet, adhere to administered drugs and treatment, and regulate the amount of appropriate physical activities persists it would lead to the severity of signs and symptoms, more physical disability, poor performance, and postponing the preparation for returning to their jobs and usual social activities.[4]

In case of modifiable risk factors, 4% had body mass index (BMI) (kg/m²) >30, 12.8% had stage 2 hypertension, and 39.6% had diabetes. The low-density lipoprotein level was elevated in 9.6% of the patients, 8% had elevated total cholesterol levels, and low levels of high-density lipoprotein levels were noted in 76.4% of the patients. Regarding the smoking status, 15.6% were current smokers and 20.8% ever smokers. 93.6% had acute coronary syndrome, 79.2% had prior percutaneous coronary intervention (PCI), 0.2% had prior coronary artery bypass graft, 55.6% had prior MI, 0.4% had prior stroke, 23.2% had normal coronary vessels, 44.4% had single vessel disease, 6.8% of them had triple vessel disease, and 98% of the patients had left ventricular ejection fraction within 30-50%. [13]

Indeed, cardiac rehabilitation and secondary prevention programmes have developed from focusing on exercise alone to becoming multidisciplinary and encompassing baseline patient assessments, nutritional counseling , risk factor management (i.e., lipids, hypertension, weight, diabetes, and smoking), psychosocial and vocational counseling , and exercise training, in addition to the appropriate use of cardio protective drugs [14]





METHODOLOGY

➤ **DESCRIPTION:**

A pooled study of individual – level analysis sampling of [60] subjects was done. All the subjects were diagnosed with several Cardiovascular diseases such as coronary artery disease(CAD), coronary rheumatic heart disease(CRDH), Atrial septal defect(ASD), Ventral Septal Defect(VSD). Subjects (n= 60) with and without co – morbidities like Diabetes, hypertension, obesity, unhealthy , improper dietary habits and with some social habits such as smoking/tobacco, alcohol consumption and combination of these were analyzed .

➤ **PARTICIPANTS:**

The study was taken up by 2 students pursuing Post graduate diploma in Nutrition and Dietetics as part of their dissertation work . Each student carried out a study of 30 subjects individually from a multi speciality hospital in Hyderabad Overall 60 subjects were analyzed .

➤ **MATERIALS AND METHOD:**

The present study was conducted among 60 patients undergoing PTCA in a multi speciality hospital in Hyderabad.

A structured pre-tested questionnaire was administered to record the detailed data such as patient profile ,chief complaints , diagnosis , present illness , history of past illness cardiovascular surgery of the patient underwent , subjective data , objective data , biochemical data , medication given , 24 – hour dietary recall , follow up diet , diet on discharge of individual , and food frequency of the subjects [n=60] were followed and analyzed.

Food consumption pattern was studied using a questionnaire to collect 24 hour dietary recall and food frequency.

The entire data was collected and analyzed in detail. The markers dealt in depth were gender, age group, BMI ranges, biochemical parameters mainly type of medications given , cardiovascular surgeries underwent, type of diet, dietary risk factors such as consumption of high fat and high calorie food, diet on discharge , their percentages and number were calculated for the complication of the data .

❖ **STUDY SUBJECTS:**

The sample population [n = 60] of 28-80 years of age were chosen from a multi speciality hospital in Hyderabad. All the patients were of different age groups, sex, socio-economic status, ethnicity with different co-morbidities and were posted for PTCA.

➤ **STUDY DURATION :**

The Study was conducted for a period of 90 days. A questionnaire was administered to obtain data for the following parameters

- Various co- morbidities [diabetes, hypertension, obesity]
- Bio chemical parameters.
- To observe various social habits in the patients undergoing PTCA like smoking and alcohol consumption
- Food consumption pattern

➤ **OBSERVATION:**

From the study it was observed that the patients were with abnormal biochemical parameters as their 24 hour diet

recall showed that their diets are high in saturated fat, high calories and high in biological protein with low fiber.

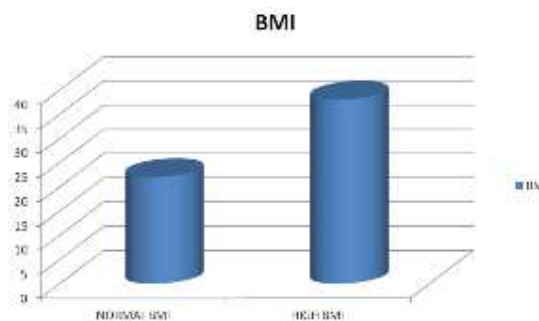
STASTICAL ANALYSIS:

The data of present study was analysed using percentages and is represented through pie charts and bar diagrams

The most common symptoms observed in the complication of study are shortness of breath (SOB), sweating, dizziness, Low blood pressure, high blood pressure, anxiety etc.

AGE GROUP	NUMBER	PERCENTAGE
20-30	4	6.6%
30-40	10	16.6%
40-50	30	50%
50-60	4	6.6%
60-70	8	13.3%
70-80	4	6.6%

BMI CLASSIFICATION



BMI	NUMBER	PERCENTAGE
Normal BMI	22	34%
High BMI	38	57%

The graph represent the percentage of BMI – 34% of the subjects are with normal BMI and 57% of the subjects are with high BMI .

RESULTS AND DISCUSSION

CARDIOVASCULAR SURGERIES PERFORMED:

TYPE OF SURGERY	NUMBER	PERCENTAGE
Major [PTCA]	60	50%
Minor [CABG]	60	50%

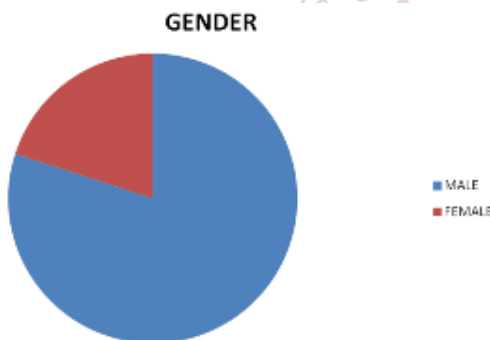
The above table represents the percentage of the surgeries i.e.. 50% of major and 50 % of minor surgeries .

SURGERIES



GENDER & AGE CLASSIFICATION

The total number of patients assessed was 48 of which were male and 12 were female patients. The below graph gives the gist .



GENDER	NUMBER	PERCENTAGE
Male	48	60%
Female	12	40%

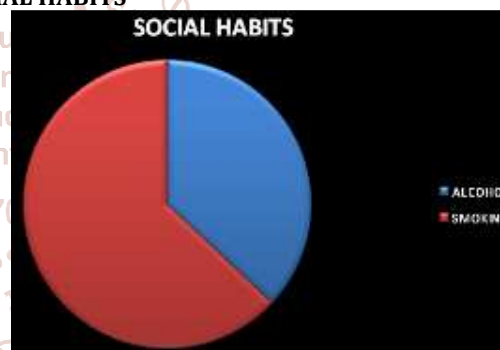
AGE CLASSIFICATION:

AGE CLASSIFICATION



The above graph describes different age groups of the subjects

SOCIAL HABITS

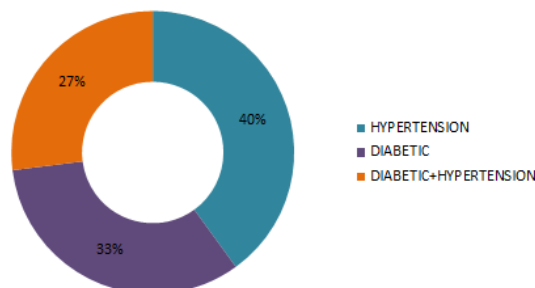


SOCIAL HABITS	NUMBER	PERCENTAGE
Smoking	38	63%
Alcohol	22	37%

The above graph represents social habits – 63 % of the subjects are smokers and 37 % of the subjects are alcoholic .

OTHER CO -MORBIDITIES

PERCENTAGE

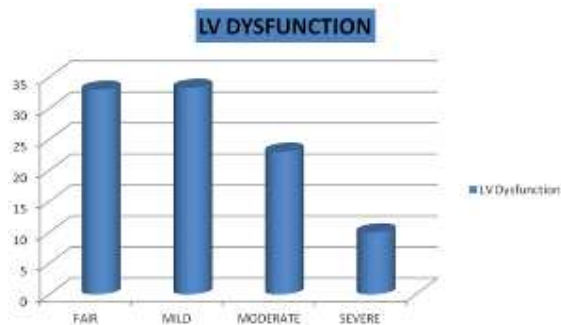


Among all the subjects, about 40% of the subjects suffer from Hypertension, which holds a majority. About 33% of the subjects suffer from Diabetes, while 27% of the subjects suffer with both Hypertension and Diabetes

Co-morbidities	Number	Percentage
Hypertension	24	40%
Diabetic mellitus	20	33%
Diabetic + Hypertension	16	27%

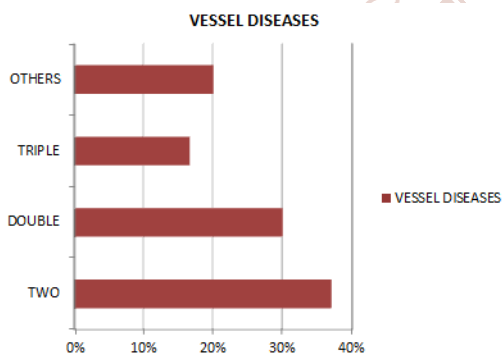
FOOD FREQUENCY	NUMBER	PERCENTAGE
Vegetarian	11	23%
Ovo – vegetarian	6	15%
Non- vegetarian	43	78%

OTHER DIAGNOSIS:



LV DYSFUNCTION	Number	Percentage
Severe	6	10%
Fair	20	33%
Moderate	14	23%
Mild	20	33.3%

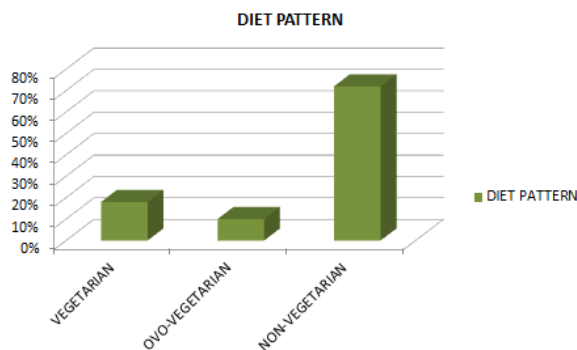
The above graph describes the LV Dysfunction – severe is 10 %, fair is 33%, moderate is 23 %, mild is 33.3%.



VESSEL DISEASES	NUMBERS	PERCENTAGE
Single	22	38%
Double	18	30%
Triple	10	12%
Others	10	20%

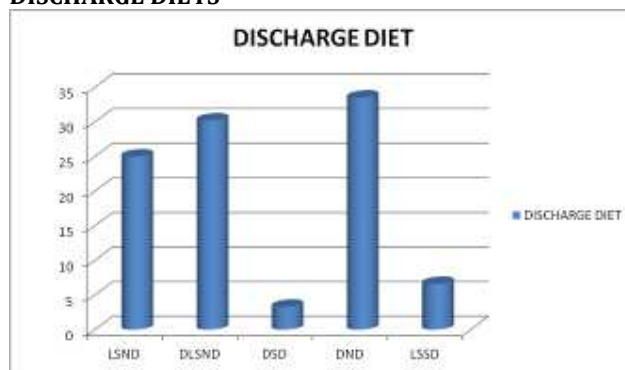
The graph describes the vessel diseases of the patients – 38 % are single vessel, 30% are double vessel, 12 % are triple vessel and 20 % are others.

DIET PATTERNS:



Among all the subjects considered, about 78% of the subjects are Non-Vegetarians, about 23% are Vegetarians and 15% are Ovo-vegetarians.

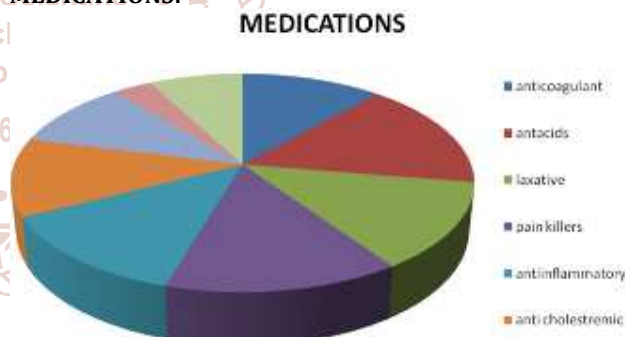
DISCHARGE DIETS



The above graph represents discharge diets – 25 % are low salt normal diet, 30 % are diabetic low salt normal diet, 3.3 % are diabetic soft diet, 33.3 % are diabetic normal diet, 6.6 % are low salt soft diet.

DISCHARGE DIET	NUMBER	PERCENTAGE
LS - ND	15	25%
DLS-ND	18	30%
DSD	2	3.3%
DND	20	33.3%
LS-SD	4	6.6%

MEDICATIONS:



CLASS OF DRUGS	NUMBER	PERCENTAGE
Anticoagulant drugs	43	72
Antacid drugs	60	100
Laxative drugs	48	80
Pain killer drugs	53	88
Anti inflammatory drugs	48	80
Anti cholestremic drugs	43	72
Anti hypertensive drugs	38	63
Oral hypoglycemic drugs	12	20
Vitamin and mineral supplementation	29	48

SUMMARY AND CONCLUSION

- This case study project was undertaken to explore the various food habits and social habits of patients undergoing PTCA.
- As cardiovascular disease is globally considered as the leading cause of death with 80 percent of CVD related deaths being reported from low and middle income countries like India.

- CVD in India alone is burdened with approximately 25 percentage of cardiovascular related deaths.
- According to the study the major modifiable risk factors are hypertension, tobacco use, and smoking, diabetes mellitus, obesity whereas the major non – modifiable risk factors are age and gender.
- From the evident data it is clear that majority of subjects undergoing cardiovascular surgeries fall under the age group 30 – 80 years and majority of the subjects are found to have normal and increased BMI.
- The results obtained clearly indicates that majority of the patients with cardiovascular disease are male and the major surgeries they undergo are DOUBLE VALVE RELACEMENT, TEMPORARY PACE MAKER IMPLANTATION, AND (PERCUTANIOUS TRANSLUMINAL CORONARY ANGIOPLASTY) PTCA.
- 40% of the subjects smokers and alcoholic, tobacco stained teeth.
- From the estimated data collected predominant subjects are effected with hypertension, diabetes and increased BMI.
- Almost subjects have normal appetite, hunger, thirst, bowel and refreshing sleep.
- Most of the subjects follow diabetic and non-vegetarian diet pattern
- Most of the subjects have low salt normal diets as they are hypertensive which is the one causative factor for PTCA.
- The study also reveals that high calorie and high fat foods along with low consumption of fruits and vegetables are the major dietary risk factors for PTCA.
- RISK FACTORS assessed through the present study:
 - Dietary risk 56.4%
 - High systolic blood pressure 31.1%
 - High total cholesterol 29.4%
 - Tobacco use 18.9%
- In the survey the patients were given different hospital diets depending up on their comorbidities and surgeries performed.
- All the subjects were on medications such as anti-hypertensive drugs, oral hypo – glycemc drugs, NSAID'S and anti-coagulant drugs

SUGGESTIONS

- A medical nutrition therapy (MNT) can bring a vast change in mortality and morbidity rates of pateints suffering from cardiovascular diseases.
- The role of human nutrition n in medicine shows that the branch of cardiology is fully covered by diabetes.
- With the necessary lifestyle intervention can help preventing the risk of cardio vascular diseases.
- Cessation of smoking and consumption of alcohol can reduce cardiovascular mortality
- All the food groups should be included in the diet .Fiber rich foods such as grains, whole fruits, raw salads must be given .
- The intake of fiber should be 14 grams for every 1000k.cal.Dietary fiber is recommended to reduce the blood LDL and glucose.
- Good amount of biological value protein i.e., milk and milk products (low fat), sprouts , pulses and legumes.
- Eat variety of fresh fruits and vegetables mostly deep coloured once such as carrot, peach, blue berry .
- 8 portions fruits and vegetables are recommended.

- Eggs are recommended as they are good source of high biological value protein as well as vitamins and minerals.
- Fish without skin and prepared in healthy way without added saturated and trans fat .
- Fish containing omega-3 fatty acids, it's is recommended to eat for at least twice a week.
- Garlic, Almonds, Walnuts, Flax seeds, fenugreek seeds.
- Choose to eat meat which is lean and prepare them healthy.
- Prefer combination of oils.
- Foods rich in fat, added sugars, beverages, junk should be cut downed.
- To lower the blood pressure, aim to eat no more than 2grams of sodium per day. Hypertension in severe conditions is recommended (DASH) diet.
- 30 – 40 minutes of physical activity should be done regularly .Yoga and meditation is also recommended.
- Therefore, this study was designed to qualify the risk factors associated with cardiovascular diseases which can be modified.

CASE STUDY FORMAT

Name- Consultant-
 Age/Sex- Date of admission-
 P.O.M.R- Date of discharge-

Past Medical History-
 Family History-
 Socio-economic status-
 Social habits-
 Literacy-

SUBJECTIVE DATA

Appetite –
 Hunger –
 Thirst-
 Bowel-
 Micturition-
 Sleep-

OBJECTIVE DATA

Height-
 IBW-
 CBWI-
 BMI-
 MAC-

BIOCHEMICAL DATA

BLOOD PROFILE-
 Hb-
 PCV-
 Platelet-
 RBS-
 FBS-
 PPBS-

RENAL PROFILE

Urea-
 Creatinine-
 Na-
 K-
 Cl-
 HCO2-

MEDICATIONS

Name of the medicine Action

CLINICAL FINDINGS-

DIET HISTORY-

Time	Food item	Quantity	Energy	Protein	Fat	CHO
		Total				

Total

FOOD FREQUENCY-

- Cereals-
- Pulses-
- GLV-
- Vegetables-
- Non-Veg-
- Egg-

QUESTIONNAIRE

A STUDY ON THE EFFECT OF FOOD HABITS AND SOCIAL HABITS IN THE PATIENTS UNDERGOING [PTCA]

- Name:
- Age:
- Sex:
- Height:
- Present Weight:
- Present BMI:
- Diagnosis:
 - Food Preferences
 - i) veg ii) non-veg
- social habits
 - i) smoking ii) alcohol
- Dietary Intake
- Good appetite ii) Poor appetite iii) Moderate/sub-optimal
- Gastrointestinal Symptoms

- No Symptoms ii) Poor appetite /Nausea iii) Occasional vomiting
- Functional Capacity
- Normal to be improved ii) Occasionally difficulty or feeling tired frequently iii) Bed ridden
- Loss of subcutaneous (below eyes, triceps, biceps, chest) i) Normal ii) Mild iii) Moderate iv) Severe
- co- morbidities :
 - i) Diabetes ii) hypertension iii) obesity
- Haemoglobin
 - i) Less than normal ii) 12.5-14.5

SUBJECTIVE DATA

- Appetite -
- Hunger -
- Thirst-
- Bowel-
- Micturition-
- Sleep-

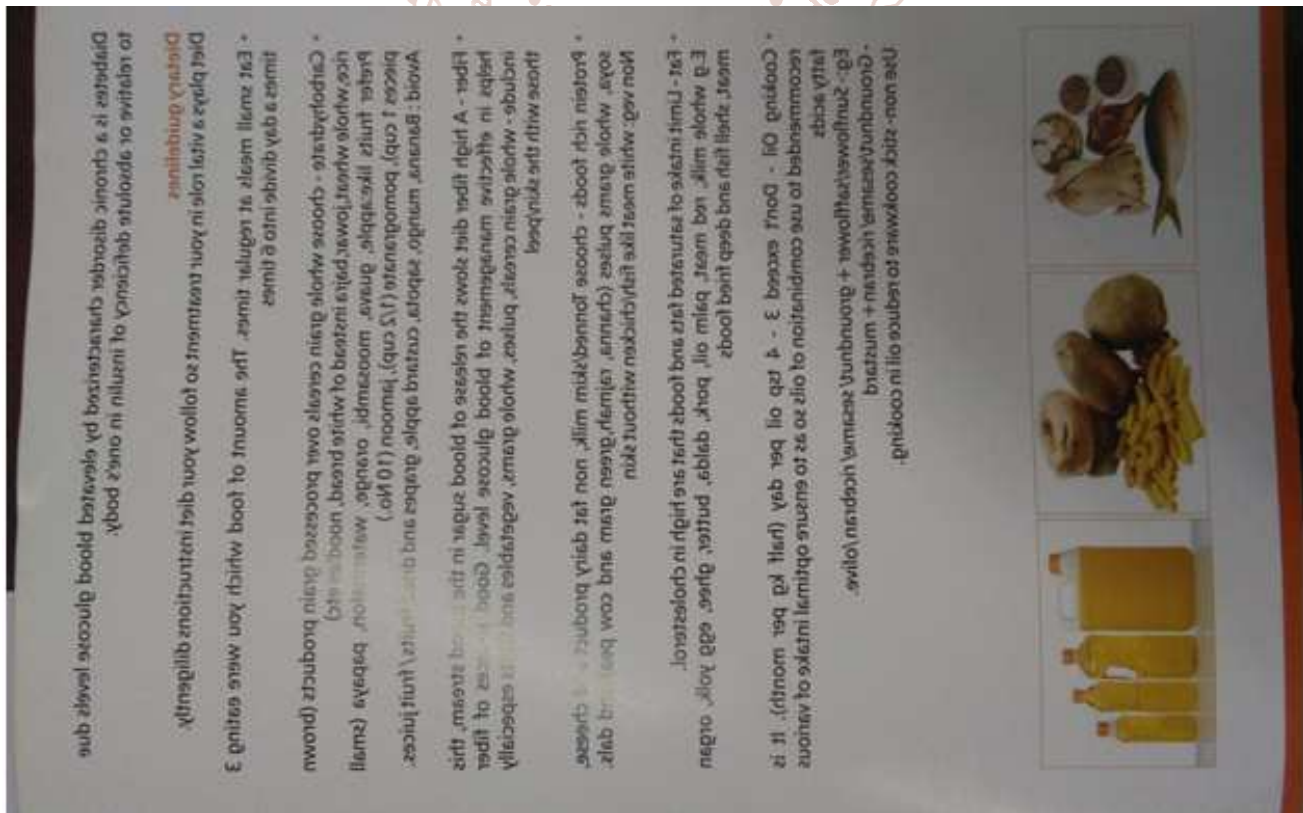
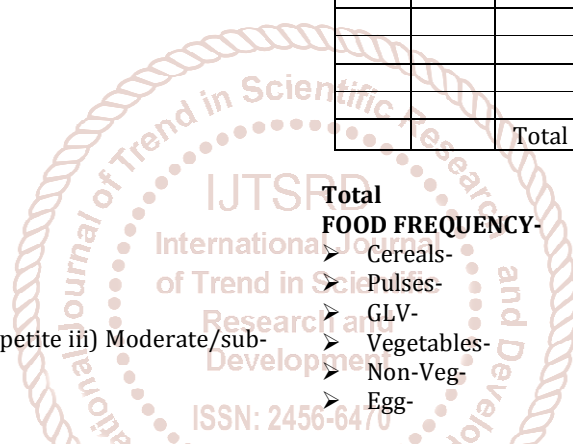
DIET HISTORY-

Time	Food item	Quantity	Energy	Protein	Fat	CHO
		Total				

Total

FOOD FREQUENCY-

- Cereals-
- Pulses-
- GLV-
- Vegetables-
- Non-Veg-
- Egg-



	FOODS TO BE ALLOWED	FOODS TO BE AVOIDED
Cereals	Rice, Bajra, Jowar, Wheat Ragl, Sago, Oats	None
Pulses	Bengal gram, Red gram, Sprouted gram	None
Vegetables	Rice, Bajra, Jowar, Wheat Ragl, Sago, Oats	Potato, Colocasia, Yam
Fruits	All Fruits	Fruit Juices, Dried Fruits
Non-Veg.	Egg White, Skin less Chicken, Loam Meat, Fish	Fried Fish, Chicken, Mutton, Egg Yolk, Organ Meat
General	Clear Soups, Skimmad	Whole Milk, Cream, Chocolates
Items	Milk, Butter Milk	Puddings, Cheese, Cakes, Pastenies, Butter, Cream Biscuits, Chips, Ice Cream, Ghee, French Fries, Soft Drinks, Fried Items

DIETARY GUIDELINES :

- Reduce the intake of sugar & salt in the diet.
- Take small frequent meals instead of 2 big meals.
- Take plenty of foods rich in fibre like green leafy vegetables, raw vegetable salad, whole fruits.
- Use only 3-4 tsp of Oil in Cooking per Day.
- Drink atleast 8-10 glasses of water daily
- Do not fast (or) follow fad diets (or) take any drugs to curb your appetite.
- Physical activity should be increased - exercise atleast 45 min. daily (Brisk walk / Swimming / Aerobic / Exercise / Cycling)
- Alternative Break fast items : Poha, Puffed rice upma, Bread toast with white Omlete, Jowar Roll, Cornflakes



Balanced Diet Chart

Ort-Riding / Early Morning:
Coffee / Tea / Milk (toned milk) - 1 Cup with 1 tsp sugar

Breakfast - 8:30 am to 9:00 am
Idly - 4 / Roti - 3 / Dosa - 3 / Upma (Wheat Rawa / Rice Flakes / Suji / Semiyal) / Bengali / Kichidi - 2
Cups with Dal / Chutney / Sambar or Veg Curry / Whole Wheat Bread - 4 slices / Oats Porridge - 1
Bowl + Egg White - 2nos / Sprouts - ½ Cup

Mild Morning - 11:00 am to 11:30 am
Buttermilk / Lime Juice / Vegetable Soup - 1 Bowl / Fruit - 1 / Salad - 1 Cup / Green Tea - 1 Cup

Lunch - 1:00 pm to 1:30 pm
Green Salad / Sprouts Salad / Boiled Vegetables - 1 Cup
Phalsa - 2
Rice - 2 Cups
Vegetable Curry - 2 Cups
Green Leafy Veg Dal - 1 Cup / Non - Veg Curry - 1 Cup
Rasam / Sambar - 1 Cup
Curd - 1 Cup

Evening Snack / Tea Time
Coffee / Tea / Milk - 1 Cup with tsp of sugar
Rice Flakes - ¾ Cup / Puffed Rice - 1 Cup / Vegetable Sambar - ½ cup /
Ragl or Oats Biscuits - 4 nos / Roasted or baked Corn - 1 Cup / Bhd Fruit - 1 Cup

Dinner - 8:00 pm to 8:30 pm
Same as lunch

Bed time
Milk / Buttermilk / Fruit

General Recommendations

- Vegetables - 250 gm / day
- Green Leafy Vegetables - 100 gm / day
- Fruits at least - 2 nos / day
- Milk - 500 ml / day of Toned Milk
- Non-Veg - twice a Week
- Oil - 4 tsp / day
- Salt - 1 tsp / day

Unhealthy - Better to be avoided

- Deep fried foods like Pani, Bajji, Pakoda, Vada, Samosa and Milk fat like Cream, Butter, Ghee and Vanaspathi
- Bakery foods, Pizzas, Burgers, Cookies, Pastries, Chocolates, Sweets, Ice Creams
- Egg yolk, fried meats and Prawns
- Alcohol, Dry Fruits & Nuts like Cashew Nut, Groundnut, Gingelly & Coconut
- Salted Snacks like Chips, Puffed Food / Canned food

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