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FREQUENCY OF RISK FACTORS OF CORONARY HEART DISEASE IN PATIENTS ADMITTED IN AYUB TEACHING HOSPITAL

By

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Abstract

Background*: Coronary heart disease (CHD) is one of the leading causes of death and disabilities in the developed world and causes significant morbidity and mortality. So, keeping this in view this study is aimed to measure the frequency of different risk factors contributing to development of CHD.*

Methodology*: Our study was a cross sectional study done at Ayub teaching hospital (ATH). Admitted patients from cardiology and CCU wards were included. Our sample size was 110. Data was collected only from those patients who had at least one cardiac event in their life. Those patients who did not show willingness or those whose language was not understandable were excluded.*

Results*: Out of 110(62 male, 48 female)) patients in the study, 51 belonged to rural and 59 belonged to urban areas, 27.3% diabetes, 57.3% had hypertension, 19% were smokers and only 14.5% were obese.*

Conclusion*: Our study mentions that frequency of people with sedentary life style has a greater part, 84.5% in CHD patients, hypertension on second number (57.3%), gender on third number as frequency of males is 56.4%, and frequency of people with short temper is 53.6% , positive family history contributes 45.5%, diabetes contribution is 27.3%, and smoking contributes 19% and obesity 14.5%.*

Key words*: Coronary Heart Disease, risk factors.*

INTRODUCTION

Coronary Heart Disease (Syn:Ischeamic Heart Disease)has been defined as "Impairment of heart function due to inadequate blood flow to the heart compared to its needs caused by obstructive changes in the coronary circulation to the heart ''[1].

It can also defined as "A disease in which a waxy substance called PLAQUE builds up inside the coronary arteries that supplies oxygenated blood to heart muscles '' [2]

Coronary artery disease is not only due to atherosclerosis about 4-7%with acute myocardial infarction have non-atherosclerotic coronary artery disease .[3]

Cardiovascular diseases are the number one cause of death globally. About 17.5 million people died from cardiovascular disease in 2012 [4] and led to 151 disability-adjusted life years (DALYs) lost---- about 31 %of all deaths and 14 % of all DALYs.[5]

The incidence and prevalence of coronary heart disease still growing .By 2020 it is estimated that it will be the major cause of death in all regions of the world .[5]

It effect both sexes (male and female)but coronary heart disease incidence is 3 times higher in men then in women and mortality is 5 times higher but this gap among both sex decreases with increasing age .[6] Coronary heart disease also

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depends on the life style and socioeconomic status of the nation about 75% of cardiovascular death occurs in low income and middle income countries .[4]Coronary heart disease is the most common cause of death in the western culture [8]about 610,000 American die from heart disease each year that is 1 in every 4 deaths .[9] CHDs varies in different races. It affects white and African American the most accounting for 24.3%and 24.1%of deaths respectively. Asian and pacific islands are at third highest risk for a heart disease related death, at 22.5 %.It account for 20.8%deaths in the Hispanic community and 17.9%in American Indians and Alaska Native.[10] It is also one of the major cause of deaths in Pakistan according to latest the world health organization data published in 2014 CHDs deaths in Pakistan reached 111,367 or 9.8 % of total deaths.[11] Pakistani population has one of the highest risks of CHDs in the world. In Pakistan 30 to 40 percent of all deaths are due to cardiovascular diseases. The coronary heart disease deaths in Pakistan have reached about 200,000 per year that is 410/100,000 of population. [12] According to study at least 12 Pakistani die every hour due to heart attack .[13]it is one of leading cause of death in KPK .The prevalence of CHDs in KPK is 11.2%.The prevalence is greater in female (13.3%) then in male (7.9%).[14]

Coronary Heart Disease have several risk factors some are modifiable risk factors such as hypertension , hypercholesterolemia, tobacco use ,physical inactivity ,obesity ,raised blood glucose level ,unhealthy diet. Some factors are non-modifiable such as age, gender, family history, stress.[15]

STUDY RATIONALE

This study was conducted in cardiology department Ayub teaching hospital abbottabad to find out the frequency of risk factors of coronary heart disease.ATH is the only tertiary care hospital in Hazara providing health facilities to the people of Mansehra, Abbottabad, Kohistan and Balakot.And accordance to the frequency of risk factors of CHDs proper awareness should done in the people of that area.

LITERATURE REVIEW

CHRONIC NON-COMMUNICABLE DISEASES:

Non communicable or chronic diseases are diseases of long duration and generally slow progression. The four main types of non communicable diseases are cardiovascular diseases, cancer, chronic respiratory diseases and diabetes.[44]

Chronic non communicable diseases accounts for almost 60% of global mortality. The attributable mortality of four major causes are CVDs is 30%, cancer (13%), chronic respiratory diseases (7%) and diabetes is (2%).[45]

CARDIOVASCULAR DISEASES

Cardiovascular diseases comprise of a group of diseases of the heart and vascular system. The major conditions are ischemic heart disease or coronary heart disease, hypertension, cerebrovascular diseases (stroke) and congenital heart disease.[16]

CORONARY HEART DISEASE

Coronary heart disease is a disease in which a waxy substance called ATHEROMA is build up inside the coronary artery which supplies the heart muscles.[17]

In today's world most deaths are attributable to non-communicable disease (36million) and just over half of these (17) are as a result of CVD.[18]

BLOOD SUPPLY OF HEART

Arterial supply of heart is provided by right and left coronary arteries which arise from ascending aorta immediately above the aortic valve. [19]

BRANCHES

- Right conus artery supply anterior surface of the right ventricle.
- Anterior ventricular branches supply the anterior surface of the right ventricle.
- Posterior ventricular branch supplies the diaphragmatic surface of the right ventricle.
- Posterior inter ventricular artery supplies the right and left ventricle and posterior part of the ventricular septum.
- Atrial branches supply the anterior and lateral surface of the right atrium.[19]

LEFT CORONARY ARTERY

It is larger than right coronary artery arises from posterior aortic sinus of the ascending aorta.

BRANCHES

- Anterior inter ventricular branch supplies right and left ventricles and anterior part of the ventricular septum.
- The circumflex artery supplies the left ventricle[19]

PATHOPHYSIOLOGHY

Coronary artery disease is almost always due to athermanous narrowing and subsequently occlusion of the vessels. Plaque might begin to build up where the arteries are damaged. The buildup of plaque in the Coronary arteries may start in childhood.[25] Mature plaque is composed of two constituents, each associated with a particular cell population. The lipid core is mainly released from necrotic "FOAM Cells'' monocyte derived macrophages, which migrate into the intima and ingest lipids. The connective tissue matrix is derived from smooth muscle cell, which migrate from media into the intima where they proliferate and change their phenotype to form a fibrous capsule around the lipid core. When a plaque produces a>50%diameterstenosis (or >75% reduction in cross sectional area), reduced blood flow through the coronary artery during exertion may lead to angina.[18]complete blockage of blood of blood occur due to clot formation by platelets and causes heart attack.[22]

RISK FACTORS

There are various risk factors which leads to CHDs. some are modifiable such as Hypertension, diabetes, tobacco use, obesity, physical inactivity, and hypercholesterolemia. While some risk factors are non –modifiable such as age, gender, race, family history.[20]

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HYPERTENSION

"Systolic blood pressure at or above 140mmHg and a diastolic pressure at or above 90mmHg.**"**[20]

It contribute about 30 - 49% as a risk factor to coronary heart disease.[20,23]

There are at least 970 million people have hypertension .The WHO rates hypertension as one of the most important cause of premature death worldwide and the problem is growing in 2025 it is estimated that there will be 1.56 billion adults living with high blood pressure[21] .

PATHOPHYSIOLOGY

People with high blood pressure are more likely to develop CHDs because high blood pressure puts added force against the artery wall. Overtime this extra pressure can damage the arteries making them more vulnerable to the narrowing and plaque builds up associated with atherosclerosis. The narrowed artery limits or blocks the flow of blood to the heart muscles, depriving the heart of oxygen. When the process is advanced enough patients can experience angina or chest pain.[20]

FAMILY HISTORY

Family history increases the risk of premature death due to CHDs. According to AMERICAN HEART ASSOCIATION study held in 2004, 55% patients had positive family history of CHDs.[33]

PATHOPHYSIOLOGY

Positive family history increases the risk of developing cardiovascular diseases. Multiple genes are responsible for developing CVDs, genes can pass on the risk of CVDs, and they can also be responsible on other conditions such as high blood pressure and high cholesterol levels.[46]

SMOKING

Mortality from CHDs is 60% higher in smoker's also regular exposure to smoking increases the risk of CHDs by 25 to 30 %. [24]

PATHOPHYSIOLOGY

Smoking damage the lining of blood vessels leading to a build up of fatty materials which narrows the arteries. The carbon monoxide in tobacco smoke decrease the amount of oxygen in blood which causes the heart to pump harder to supply the required oxygen to the body .The nicotine in cigarettes stimulate body to produce adrenaline which increases heart beat and blood pressure due to which blood is more likely to clot which increases the risk of CHDs.[24]

DIABETES

There is strong correlation between CVDs and Diabetes. It increases the mortality rate due to heart diseases by 2 to 4 times .about 68% of people with Diabetes die from some form of heart disease.[25]

PATHPPHYSIOLOGY

At least four complex process alone or combined, can lead to diabetic heart disease. They include coronary atherosclerosis, metobolic syndrome, insulin resistance in people who have type 2 diabetes, and high blood pressure .[25]

PHYSICAL INACTIVITY

Physical activity reduces the risk of CHDs .The 2002 WHO report estimated that over 20%of CHDs in developed countries was due to physical inactivity.

It contributes about 22% as a risk factor to coronary heart disease.[23]

PATHOPHYSIOLOGY

Regular physical exercise increases the concentration of HDL (high density lipoprotein) and Decrease body weight and blood pressure.[26]

AGE

CHDs increases with age. Increased total cholesterol, blood pressure, high body mass index and lower HDL cholesterol are the major factor which increases the risk for CHDs in advanced age .[27]

GENDER

More common in men then in women during their middle age but this gap decreases with increasing age.

Incidence of CHDs among different age group is different. Among 25—49 years the relative risk is 6.25%, among 50—59 years it is 3.56% and among 60—64% it is 2.23%.[29]

HYPERCHOLESTROLAEMIA

CHDs risk is related to cholesterol level. The INTERHEART study suggest that 45% 0f heart attack in Western Europe are due to abnormal lipid level.[30]

It contributes about 31% as a risk factor to coronary heart disease.[23]

SOCIOECONOMIC STATUS

Socioeconomic status plays an important role in CHDs .according to WORLD HEALTH ORGANIZATION about 75% of cardiovascular death occurs in low income and middle income countries.[7]

SIGNS AND SYMPTOMS OF CORONARY HEART DISEASE:

The common symptoms of coronary heart disease are**:**

ANGINA

Angina is a chest pain which occur if an area of heart muscles doesn't get enough oxygen.

Angina may feel like pressure in chest, shoulder, arms, neck, jaw or back. The pain Angina is a chest pain which occur if an area of heart muscle does not get enough tends to get worse with activity.

SHORTNESS OF BREATH

These symptoms occur if CHDs causes heart failure. During heart failure heart can't pump enough blood to meet body's need .fluid builds up in lungs making it hard to breath.

SILENT CORONARY HEART DISEASE

Some people who have CHDs have no sign or symptoms this condition is called silent CHDs. The disease may not be diagnosed until person has sign or symptoms of heart attack, heart failure or an Arrhythmias.

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HEART ATTACK

If flow of oxygenated blood is cut off to a section of heart the section of heart will die. Symptoms of heart attack are chest pain, pressure, indigestion or heart burn, nausea, vomiting, light headedness or fainting, shortness of breath etc.

HEART FAILURE

Heart failure occurs if blood flow to heart is completely blocked. Symptoms are shortness of breath, fatigue, swelling in the ankles, feet's, legs, stomach and vein in the neck.

ARRHYTHMIAS

Irregular heart beat is called arrhythmias.

TREATMENT AND PREVENTION

The most effective way to combat the epidemic of cardiovascular diseases in low income countries is its prevention. A report was prepared by WHO expert Committee on prevention of CHD which recommended the following strategies.

Population strategies, high risk strategies and secondary prevention. The population strategy includes prevention in whole population and primordial prevention. Treatment includes medicine like beta blockers, blood thinners (aspirin), calcium channel blockers and statins for the control of cholesterol metabolism.

DIAGNOSIS

- Proper Medical History,
- Family History,
- Risk factors for CHDs,
- Physical Examination,
- Test and Procedure,

TESTS

- Electrocardiogram,
- Stress testing,
- Echocardiography,
- Chest X-ray,
- Blood test for certain fats, carbohydrates, cholesterol and protein,
- Coronary Angiography,
- Cardiac Catheterization.

OBJECTIVES

To determine the frequency of risk factors for coronary heart disease.

OPERATIONAL DEFINITIONS

For our study a case of CHD was defined as the one with diagnosed condition of CHD and admitted in cardiology or CCU wards.

HYPERTENSION

A known hypertensive patient who was on regular antihypertensive therapy for the last 6months was considered as hypertensive.

SMOKERS

A patient with a positive history of smoking 5 or more cigarettes per day for 6 months or above was considered as smokers.

POSITIVE FAMILY HISTORY

Positive family history is defined as presence of diagnosed coronary heart disease in siblings or parents.

DIABETES:

A known diabetic patient who was on regular anti diabetic therapy whether oral or injectable for at least 6 months.

EXERCISE

Walk or other physical activity for an hour daily other than house hold activities.

STUDY METHODOLOGY

STUDY DESIGN

Cross- sectional study.

SETTING:

Cardiology care unit Ayub Teaching Hospital Abbottabad.

DURATION:

21 March 2017 to 15 July 2017.

SAMPLE SIZE:

Total 110 patients were enrolled for our study.

SAMPLING TECHNIQUE:

Non-probability convenient method.

SAMPLE SELECTION:

Sample was selected by the following inclusion and exclusion criteria.

INCLUSION CRITERIA:

Patients of either gender admitted in CCU of any age and having history of at least one cardiac event in their life were included in the study.

EXLUSION CRITERIA:

Unstable patients admitted in CCU were excluded from our study and also those whose language was not understood.

DATA COLLECTION:

We used structured questionnaire as a data collecting tool .We collected data by interviewing the patients ourselves. Data was collected by 7 students and 15 patients were interviewed by each student after informed consent and assuring them about keeping the confidentiality of their information.

DATA ANALYSIS:

SPSS version 16 was used for data entry and analysis .Data was presented in the form of tables and diagram. Quantitative data was described by mode, mean and standard deviations and categorical data was described by rates and proportions.

RESULTS

A total of 110 patients were enrolled in our study from Cardiology department Ayub teaching hospital Abbottabad in which 41(37.3%) were admitted in cardiology ward while 69(62.7%) were admitted in CCU. Maximum age of the patient was 95 and minimum 22 and mean age of patients was 54.71 $\pm$13.316 years and mode is 65.Figure:1 shows different age distribution in patients with coronary heart disease with mean of 54.71±13.316 in total sample of 110.

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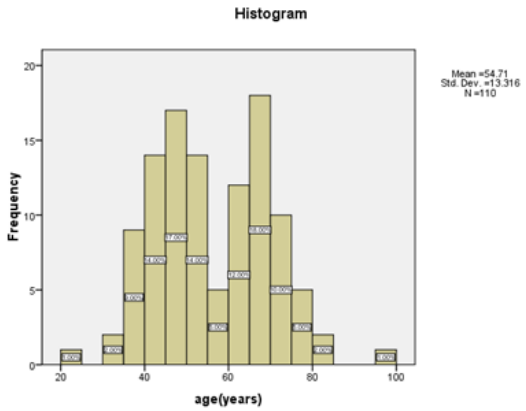

Figure: 1. Age distribution of patients with CHDs.

In our study, 62(56.3%) were male while 48(43.6%) were female as shown in table 1.

Table: 1 Gender wise distribution of the patients.

Gender	Frequency (%)
Male	62(56.4)
Female	48(43.6)
Total	110

Out of 110 patients included in our study, 34(30.9%) were formally educated, 75(68.2%) were uneducated while 1 patient was Hafiz e Quran as shown in table 2.

Table: 2 Educational statuses of the patients.

Educational status	Frequency (%)
formally educated	34(30.9)
Uneducated	75(68.2)
hafiz e Quran	1(.9)
Total	110

In our study, 51(46.4%) patients were from rural area while 59(53.6%) patients were from urban area as shown in table 3.

Table: 3 Area of Residence of the patients.

Area of residence	Frequency (%)
Rural	51(46.4)
Urban	59(53.6)
Total	110

Out of 110 patients 7 (6.4%) were single, 102 (92.7%) were married while 1 patient was divorced as shown in table 4.

Table: 4 Marital status of the patients.

Marital status	Frequency (%)
never married	7(6.4)
Married	102(92.7)
Separated	1(.9)
Total	110

Among 110 patients 46(41.8%0 were from lower class, 53(48.2%) were from middle class, and 11(10.0%) were from upper class as shown in table 5.

Table: 5 socioeconomic statuses of the patients.

Socioeconomic status	Frequency (%)
Low	46(41.8)
Middle	53(48.2)
Upper	11(10.0)
Total	110

Table 6 shows the occupational status of the patients in which 13 (11.8%) were government employee, 11(10.0%) were private workers, 19(17.3%) were having self business, 17 (15.5%) were unemployed, 12(10.9%) were retired while 38(34.5%) females were house wife.

Table: 6 Occupational statuses of the patients.

Occupation	Frequency (%)
government employee	13(11.8)
private worker	11(10.0)
self business	19(17.3)
house wife	38(34.5)
Unemployed	17(15.5)
Retired	12(10.9)
Total	110

Out of total 110 patients, 63(57.3%) were hypertensive and 47(42.7%) were non-hypertensive as shown in table 7.

Table: 7 Frequency of hypertensive patients.

Hypertension	Frequency (%)
Yes	63(57.3)
No	47(42.7)
Total	110

Out of 63(57.3%) hypertensive patient frequency of hypertensive patients with duration of 1-10 years was 56(88.9%) and 11-20 years hypertensive's were 7(11.1%) as

shown by table 8.mean duration of hypertension was 5.59±4.81.

Duration of Hypertension (years)	Frequency (%)
1-10	56(88.9)
11-20	7(11.1)
Total	63(100)

Table:8 Duration of Hypertension

Table 9 shows that 55(87.3%) of the patients were hypertensive before the development of CHD and only 8(12.7%) patients found to be hypertensive after the CHD.

Table. 9: Hypertensive before or after CHD

Hypertension	Frequency (%)
Before developing CHDs	55(87.3)
After developing CHDs	8(12.7)
Total	63(100)

In our study frequency of current smokers was 9(8.2%), frequency of non-smokers was 89(80.9%) while frequency of ex-smokers was12 (10.9%) as shown in table 10.

Table: 10 Frequency of smokers and non-smokers and ex-smokers.

Smokers	Frequency (%)
current smoker	9(8.2)
ex smoker	12(10.9)
non smoker	89(80.9)
Total	110

Table 11 shows the number of cigarettes smoked per day. 10-20 cigarettes were smoked by 19 patients and 10-20 cigarettes per day were smoked by 1 person and more than 20 cigarettes were also smoked by just one person.

Table: 11 Cigarettes smoked per day.

Cigarettes per day	Frequency (%)
1-10	19(17.3)
10-20	1(.9)
Above 20	1(.9)
Total	21(19.1)

Out of total smokers 1-10 years duration of smoking frequency was 11(10%) 10-20 years duration smokers were 6(5.5%) 20-30 years were 2(1.8%) 30-40 years were 2(1.8%) (Table: 12).the mean duration was 14.33± 12.18 and the mode is 20.

Table: 12 Duration of smoking

Duration (years)	Frequency	Percent
1-10	11	10.0
10-20	6	5.5
20-30	2	1.8
30-40	2	1.8
Total	110	100.0

Family history of coronary heart disease is given in table 13, in which 50(45.5%) were having positive family history while 60(54.5%) were having negative family history.

Table: 13 Family history of coronary heart disease.

Family history	Frequency (%)
Yes	50(45.5)
No	60(54.5)
Total	110

Table 14 shows physical exercise of the patients. Out of 110 patients 17 (15.5%) were having regular physical exercise while 93(84.5%) were not having any exercise other than routine work.

Table: 14 Physical exercises of the patients.

Physical exercise	Frequency (%)
Yes	17(15.5)
No	93(84.5)
Total	110

In our study, 30 (27.3%) patients were diabetic while 80(72.7%) patients were non-diabetic as shown in table 15.

Table 15: Frequency of diabetes among patients.

Diabetes	Frequency (%)
Yes	30(27.3)
No	80(72.7)
Total	110

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Table 16 shows that among patients who were diabetics, individuals who had diabetes of 1-12 years duration were 28 and those with diabetes duration from12-25 were only 2.

Table. 16: duration of diabetes

Duration of diabetes (years)	Frequency (%)
1-12	28(25.5)
12-25	2(1.8)
Total	30(27.3)

25(83.3%) of the total diabetics were diabetic before the development of CHD and 5(16.7%) developed diabetes after they got CHD as shown by the table 17.

Table. 17: diabetic before or after CHD

Diabetics	Frequency (%)
Before developing CHDs	25(83.3)
After developing CHDs	5(16.7)
Total	30

Table 18 shows most favorite food of the patient. Out of total 110 patients 49(44.5%) were eating mixed food, 41(37.3%) were eating vegetables, 12(10.9) were eating rice, 7(6.4%) were eating meat while 1(0.9%) were eating fried rice mostly during the week.

Table 18 Most favorite food among patients.

Favorite food	Frequency (%)
Meat	7(6.4)
Mixed	49(44.5)
Rice	13(11.8)
Vegetables	41(37.3)
Total	110

Figure 2 shows most common cooking style among patients .75% patients were eating normal cooked food, 20 % were eating friend food while 15% were eating boiled food.

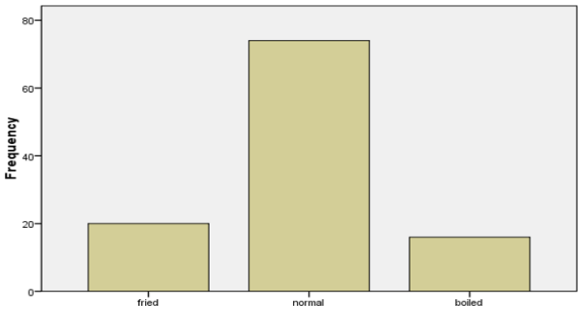

Figure 2 : The most common cooking style among patients.

Table 19 shows physical appearance of the patients in which 50(45.5%) were lean, 44(40.0%) were healthy while 16(14.5%) were obese.

Table: 19 Physical appearance of the patients.

Physical appearance	Frequency (%)
Lean	50(45.5)
Healthy	44(40.0)
Obese	16(14.5)
Total	110

Table 20 shows personality of the patients in which 51(46.4%) were calm personality patients while 59(53.6%) were short temper patients.

Table: 20 Personality of the patients

Type of person	Frequency (%)
Calm	51(46.4)
short temper	59(53.6)
Total	110

DISCUSSION

Our study was conducted to find out the frequency of risk factors for coronary heart disease in patients attending Ayub Teaching Hospital. Cardiovascular diseases are the number one cause of death globally. About 17.5 million peoples die every year due to coronary heart disease.[4] Major risk factors for coronary heart disease are hypertension , diabetes mellitus , smoking ,family history , sedentary lifestyle ,socioeconomic status ,gender and diet.[15] We studied hypertension , diabetes mellitus , age , gender ,smoking , socioeconomic status ,sedentary life style ,diet and family history. According to our study percentage of hypertension was 57.3% ,smoking was 8.2% for current smoker while 10.9% for ex. smokers, diabetes mellitus was 27.3% , sedentary life style was 84.5% , family history was 45.5% , and 44.5% patients were vegetarian while 10.9% were eating meat.

110 patients was studied in which 37.3% were admitted in cardiology ward while 62.7% were admitted in CCU. Patients of either gender aged between 22—95 (Mean 54.71) were studied in which 56.4% were Male and 43.6% were female. Out of this 110 patient 30.9% were educated while 68.2% were un-educated.

Hypertension is one of the major risk factor of CHDs .[15]As shown above in our study result it was the major risk factor present in 57.3% in CHDs patients attending ATH. During the study 63 were hypertensive while 47 were non hypertensive. According to THE ATLAS OF HEART DISEASE AND STROKE published by WORLD HEALTH ORGANIZATION in 2004 It contribute about 49% as a risk factor to coronary heart disease.[23] According U.S Department of Health and Human Services , NATIONAL HEART , LUNG ,AND BLOOD INSTITUTE There are at least 970 million people who have hypertension .The WHO rates hypertension as one of the most important cause of premature death worldwide and the problem is still growing, in 2025 it is estimated that there will be 1.56 billion adults living with high blood pressure.[21]

In our study result family history was the second major risk factors of coronary heart disease. it was positive in 45.5% patients of CHDs attending Ayub Teaching Hospital .Family history increases the risk of premature death due to CHDs. According to AMERICAN HEART ASSOCIATION study held in 2004, 55% patients had positive family history of CHDs.[33]

In our study frequency of smoking was 8.2% for current smokers, 10.9% were for ex–smoker while 89(80.9%) were for non-smokers .Smoking is one of the major risk factors. According to Framingham study risk of CHDs was 3 times higher in smoker who consume 20or more cigarettes per day than in Non- smokers.[32] Mortality from CHDs is 60% higher in smokers also regular exposure to smoking increases the risk of CHDs by 25 to 30 %.[24]

Diabetes mellitus was positive in 27.3% patients included in our study. According to study of AMERICAN HEART ASSOCIATION, There is strong correlation between CVDs and Diabetes. According to the study of AMERICAN HEART ASSOCIATION in 2015 , di8abetes mellitus increases the mortality rate due to heart diseases by 2 to 4 times .about 68% of people with Diabetes die from some form of heart disease.[25]

During our study we found that incidence and prevalence of CHDs was less common in female as compared to male which was 43.6% and 56.4% respectively. According to AMERICAN HEART ASSOCIATION JOURNAL published in 1999 CHDs is more common in men then in women during their middle age but this gap decreases with increasing age. The relative risk of CHDs among both sex groups is different in different age groups .Among 25—49 years the relative risk is 6.25% ,among 50—59 years it is 3.56% and among 60—64% it is 2.23%.[29]

Out of 110 patients 15.5% were doing regular exercise while rests of the 84.5% were not doing any exercise other than routine work. Exercise is very essential for healthy life as it reduces the risk of CHDs. The 2002 WHO report estimated that over 20%of CHDs in developed countries was due to physical inactivity. According to THE ATLAS OF HEART DISEASE AND STROKE PUBLISHED BY WHO IN 2004 It contributes about 22% as a risk factor to coronary heart disease.[23]

In our study 41.8%were from lower class, 48.2% were from middle class and 10.0% were from upper class. Socioeconomic status plays an important role in CHDs .according to WORLD HEALTH ORGANIZATION about 75% of cardiovascular death occurs in low income and middle income countries .[4]

CONCLUSION

Hypertension is the major risk factor for coronary heart disease. The second major risk factor is family history, diabetes, smoking, sedentary life style also plays important rule in CHDs.

RECOMMENDATION

Proper monitoring of blood pressure, diabetes and regular exercise and stop smoking can decrease the risk of coronary heart disease

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