

Frequency of Myocardial Infarction among Men and Women presenting to
Cardiac Care Unit of the Lady Reading Hospital, Peshawar

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Abstract

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Objective: To determine the risk factors of MI (Coronary artery disease) in Cardiac Care unit (CCU) of the Lady Reading Hospital Peshawar. To determine the ratio of MI in men and women in the Lady Reading Hospital Peshawar.

Methodology: The current study was conducted through a modified questionnaire. It was a descriptive cross-sectional study in LRH Peshawar. It was conducted in CCU at LRH

through a close ended questionnaire. The Performa was filled after taking consent from the patient. **Results:** Our total sample size was 138 in which there were 40 females and 98 males which show that the frequency of male 71% was greater than female 29%.

Hypertension is the highest risk factor in both male and female gender causing MI. In all the risk factors of MI percentage of female was greater than male except smoking and exercise. **Conclusion:** From taking different variables we come to know that the greater risk factor for MI is stress, hypertension, diabetes, positive family history of hypertension, abnormal lipid profile, positive family history of diabetes and MI, smoking and other heart disease.

Key Words: Myocardial Infarction, Heart attack, Chest pain, Coronary artery,

Introduction

MI is also known as "heart attack". MI occurs when adequate blood flow to the part of heart is stopped due to the lack of blood to heart, tissues are damaged causing necrosis of heart tissues. The coronary arteries which supply blood to heart become blocked due to formation of plaque, White Blood Cells and Cholesterol known as atherosclerosis. If this occurrence is prolonged then it is called Acute MI(1). About 64% people who don't have chest pain that radiates to left shoulder, jaw, back and have epigastric pain is called "silent" MI (2). During the past decades a lot of improvement has been achieved in the treatment of patient with heart attack(3). Many of asymptomatic individuals have high risk of occurring of 1st heart attack due to genetic predisposing unhealthy dietary habits, smoking or physical inactivity. Almost third of the patient involving in heart attack die before they are arrived to the hospital to get effective treatment. Finally, those who are survived from acute MI resulting in a great number of patient with chronic conditions that is increase with the age(4). Due to prolonged decrease of blood supply blockage of the coronary artery occur causing necrosis of myocytes known as MI (5). In acute coronary syndrome heart attack occur in the naturally trace of deposition of fats in the coronary arteries of the heart(6). To quick handle MI strategically, like resuscitation, reperfusion, with chest pain or any other symptomatic ischemia causing ST segment elevation (STEMI) or non-ST elevation (NSTEMI) those who don't have ST segment elevation(7). Symptomatic MI consists of atypical chest pain, angina pectoris with no initial sign. Silent MI is when mildly cardiac arrest does not produce any symptom(8),(9). MI occurs when there is low blood flow in the heart because of coronary arteries narrowing due to deposition of fat, cholesterol resulting in thrombus known as atherosclerosis. Cause of MI is the making of thrombus in the coronary arteries of

heart(10). A detail history of patient with MI is taken like blood pressure, physical examination performed in the cardiac care unit of the hospital. ECG should be taken to find the abnormality of the heart rhythm knows as arrhythmia, abnormality of heart beat like tachycardia (more than 100) or bradycardia (less than 60), ST segment elevation and ST segment depression. Any blockage of the coronary artery is detected by coronary angiography. Heart attack is confirmed if at least two of the three criteria are suspected. MI is when there is radiating ischemic chest pain, abnormal waves finding on ECG, the increase level of CK-MB in the blood, according to WHO definition. Sensitive marker of MI is troponin I and troponin T which is specific(11). Quick treatment of heart attack is to take aspirin (that forbid blood clot), nitroglycerin for curing angina or chest pain and oxygen (12). ST elevated MI is treated by revascularization procedure, angioplasty (thrombus is destructed and occlusion is treated by medicine) (13). Angioplasty should be done when patient is at high risk of heart attack. Bypass surgery should be done to treat diabetes patient in case of more than one occlusion to restore sufficient blood supply to heart(14),(15). MI is the major complication of ischemic heart disease. In South Asian countries Pakistan is a developing country and having population more than one eighty million. Mostly population of Pakistan (67.5%) reside in rustic area and having large number tolerate the lade cardiac disease. The farming ham study (1961 cited in Kannel) described that high blood pressure, smoking cigarette, obesity, diabetes and high level of cholesterol in the blood were significant risk factor for the aggression of the disease. One more study describe that the high prevalence of heart attack risk factor in Pakistan is higher than thirty percent of the population more than forty-five years of age are assume by this ischemic heart disease. Punjab is the most developed and high populated province of the Pakistan and accompanying of population is higher than forty-five percent of the whole population of Pakistan. Still there is deficit of data of CHD risk factor load or it regulates status in Pakistan. More ever low amount of heart attack risk factor had been noted in Peshawar and Rahimyar khan, Pakistan. The objective of this study is to collect epidemiological data on heart attack in North Punjab and to find out the risk factor accountable for heart attack and to reduce the load of the disease by changing the lifestyle. Ischemic heart disease is the cause of 17.1 million deaths per year all over the world. Today the coronary heart disease is the major

contributor of the death all over the world and will progress the death dominantly in the future. It has been noted that mostly the death (thirty-nine) in low and medium in some countries below the age of seventy years are due to coronary heart disease. Heart attack is the complication of ischemic heart disease. Vulnerable populations to heart attack are Asian people. It is evaluated that MI is fifty percent more than in South Asians as compare to white population of the United Kingdom(16). To know the risk factors of myocardial infarction and to take precaution to reduce the incidence of MI. Objective of the study is to determine the risk factors of MI (Coronary artery disease) in Cardiac Care unit (CCU) of the Lady Reading Hospital Peshawar and to determine the ratio of MI in male and female in the Lady Reading Hospital Peshawar.

Material and Method:

2.1 STUDY DESIGN:

The current study was conducted through a modified questionnaire. It was a descriptive cross-sectional study in LRH Peshawar.

2.2 STUDY SETTING AND TARGET POPULATION:

The current study was conducted in CCU at LRH through a close ended questionnaire. The Performa was filled after taking consent from the patient.

2.3 SAMPLING TECHNIQUE:

Non-Probability Sampling (Convenient Sampling technique) was used for this study.

2.4 SAMPLE SIZE CALCULATION:

$$n = \frac{Z^2 * (p) * (1-p)}{E^2}$$

Where:

Z = Z value (e.g. 1.96 for 95% confidence level)

p = percentage picking a choice, expressed as decimal (.5 used for sample size needed)

E = acceptance error , expressed as decimal (e.g., .05 = ±5) (34)

$$n = \frac{1.96^2 * (10) * (1-10)}{(0.05)^2}$$

$$n = 138$$

STUDY DURATION:

4 months (Feb-May)

INCLUSION CRITERIA:

All the adult patients presenting with MI.

EXCLUSION CRITERIA:

MI patients presenting with last stage of carcinoma.

MI patients with irreversible hemorrhagic stroke.

Those who shows no interest/ not willing.

MI ASSESSMENT AND DATA COLLECTION PROCEDURE:

The data will be collected by a questionnaire designed by the researcher on various aspects related to awareness of MI risk factors. The responses of the participants will be noted by the researcher on the spot against each question.

STATISTICAL ANALYSIS:

The descriptive statistical analysis data on SPSS (Statistical Package for the Social Sciences) version 29. Histogram, bar chart, Pie chart and frequency distribution were used to provide an overall clear arrangement and thesis presentation.

Results:

Our total sample size was 138 in which there were 40 females and 98 males. In which 35 females were conscious and 5 were unconscious whereas 88 males were conscious and 10 were unconscious. 33 females are hypertensive and 7 are not hypertensive whereas 56 males are hypertensive and 42 have no hypertension. 26 females have positive family history of hypertension and 14 have no family history of hypertension whereas 53 males have positive family history of hypertension and 45 have no family history of hypertension. 25 females are diabetic and 15 have no diabetes whereas 32 males are diabetic and 66 have no diabetes. 24 females have positive family history of diabetes and 16 have no family history of diabetes whereas 29 males have positive family history of diabetes and 69 have no family history of diabetes. 21 females have positive family history of MI and 19 have no family history of MI whereas 39 males have positive family history of MI and 59 have no family history of MI. 23 females have abnormal lipid profile and 17 have no abnormal lipid profile whereas 35 males have abnormal Lipid profile and 63 have no abnormal lipid profile. 31 females have stress and 9 have no stress whereas 50 males have stress and 48 have no stress. The exercise ratio of female is 1 and male is 5.7 females and 8 males were on antiplatelet therapy. Females are non-smoker whereas

23 males are smoker and 75 are non-smoker.18 females and 29 males have other heart related diseases. 1 female and 2 males have done cardiac intervention out of 138 sample size.

Table 4.1

	FEMALE					MALE				
	YES	%	NO	%	TOTAL	YES	%	NO	%	TOTAL
CONCIOUS LEVEL	35	87.5%	5	12.5%	40	88	89.8%	10	10.2%	98
HYPERTENSIVE	33	82.5%	7	17.5%	40	56	57.1%	42	42.9%	98
FAMILY HX OF HYPERTENSION	26	65.0%	14	35.0%	40	53	54.1%	45	45.9%	98
DIABETIC	25	62.5%	15	37.5%	40	32	32.7%	66	67.3%	98
FAMILY HX OF DIABETES	24	60.0%	16	40.0%	40	29	29.6%	69	70.4%	98
FAMILY HISTORY OF MI	21	52.5%	19	47.5%	40	39	39.8%	59	60.2%	98
ABNORMAL LIPID PROFILE	23	57.5%	17	42.5%	40	35	35.7%	63	64.3%	98
STRESS	31	77.5%	9	22.5%	40	50	51.0%	48	49.0%	98
EXERCISE	1	2.5%	39	97.5%	40	4	4.1%	94	95.9%	98
ANTIPLATELET THERAPY	7	17.5%	33	82.5%	40	8	8.2%	90	91.8%	98
SMOKER	0	0.0%	40	100.0%	40	23	23.5%	75	76.5%	98

HEART RELATED DISEASE	18	45.0%	22	55.0%	40	29	29.6%	69	70.4%	98
CARDIAC INTERVENTION	1	2.5%	39	97.5%	40	2	2.0%	96	98.0%	98

Cross tabulation of gender with other variables/ risk factors

Our total sample size was 138 in which there were 40 females and 98 males this shows that the frequency of male is greater than female. females in age group of 51-60 and male in age group 41-70 are more prone to MI. 40 females and 98 males sample size is taken in which 33 females are hypertensive and 7 are not hypertensive whereas 56 males are hypertensive and 42 have no hypertension. That means hypertension is the leading cause of MI and the range of female is greater than male presenting with the history of hypertension. 40 females and 98 males sample size is taken in which 26 females have positive family history of hypertension and 14 have no family history of hypertension. Whereas 53 males have positive family history of hypertension and 45 have no family history of hypertension. The percentage of female is greater than male presenting with positive family history of hypertension. 40 females and 98 males sample size is taken in which 25 females are diabetic and 15 have no diabetes whereas 32 males are diabetic and 66 have no di. The percentage of female is greater than male presenting with the history of diabetes. 138 sample size is collected in which total females are 40 and males are 98. In which 1 female and 4 males do exercise. The percentage of male is greater than female. 138 sample size is collected in which total females are 40 and males are 98. In which 18 females and 29 males have other heart related diseases. The percentage of female is greater than male presenting with other cardiac related disease. 1 female and 2 males have done cardiac intervention out of 138 sample size. The percentage of female is greater than male who have done cardiac intervention.

TABLE 4.2:

138 sample size is collected in which total females are 40 and males are 98. In which 23 females have abnormal lipid profile and 17 have no abnormal lipid profile. Whereas 35 males have abnormal lipid profile and 63 have no abnormal lipid profile. The percentage of female is greater than male presenting with the history of abnormal lipid profile.

In male: 35.7%

In female: 57.5%

Patient gender * Does the patient have abnormal lipid profile Cross tabulation

Count		Does the patient have abnormal lipid profile		
		No	Yes	Total
Patient gender	Female	17	23	40
	Male	63	35	98
Total		80	58	138

Table 4.2 cross tabulation of gender with those patient presenting with mi having abnormal lipid profile

TABLE 4.3

138 sample size is collected in which total females are 40 and males are 98. In which 31 females have stress and 9 have no stress. Whereas 50 males have stress and 48 have no stress. The percentage of female is greater than male presenting with stress.

In male: 51.0%

In female: 77.5%

Patient gender * Did the patient have any stress Cross tabulation

Count		Did the patient have any stress		
		No	Yes	Total
Patient gender	Female	9	31	40
	Male	48	50	98
Total		57	81	138

Table 4.3 cross tabulation of gender with those patient presenting with MI having stress



TABLE 4.4

138 sample size is collected in which total females are 40 and males are 98, which shows that females are non-smoker. Whereas 23 males are smoker and 75 are non-smoker. So the percentage of male is greater than female that are smoker.

In male: 23.5%

In female: 0.0%

Patient gender * Is the patient smoker Cross tabulation

Count		Is the patient smoker		
		No	Yes	Total
Patient gender	Female	40	0	40
	Male	75	23	98
Total		115	23	138

Table 3.4 cross tabulation of gender with those patient presenting with MI who are smokers.

Discussion:

Risk factor in various areas of Pakistan is important for the purpose to build national health strategies for the stopping. Current studies show that the ischemic heart disease and the risk factors i.e. diabetes, smoking, hypertension and obesity is accelerating in our country. Our study shows that heart attack male patient of the urban and rural area of Punjab Pakistan were young (41-60 years old). Gender differences are also common in our study population P 0.015 which shows that the previous studies describe that middle aged men have 20-50 times more risk of heart attack than woman. The woman who is younger is saved because of hormonal changes which decreases the incidence of heart attack in postmenopausal woman. A study confirms and extends previous findings that women with AMI tend to be older than men with AMI and are more likely to have cardiac risk factors(1). Current studies show that the ischemic heart disease and the risk

factors i.e. diabetes, smoking, hypertension and obesity is accelerating in our country. Numerous studies have demonstrated a powerful association of high blood pressure with the risk of CHD. 37.5% of young AMI patients were hypertensive. This is a much higher percentage as compared to young AMI South Asian patients. The risk for all forms of CVD is increased substantially with the presence of diabetes mellitus. Mortality associated in patients with diabetes who have experienced a MI is much higher as compared to non-diabetic patients(16). The study of Canto et al has recently shown that the presence of smoking or hypercholesterolemia is associated with the presence of chest pain in patients with AMI. Our study shows that the majority of the non-smokers and normal cholesterolemia patients had chest pain presented with acute myocardial infarction. They are involved in other risk factor and positive family history of the disease (23).

Conclusion:

Our total sample size was 138 in which there were 40 females and 98 males which show that the frequency of male 71% was greater than female 29%. Hypertension is the highest risk factor in both male and female gender causing myocardial infarction. In all the risk factors of myocardial infarction percentage of female was greater than male except smoking and exercise. Taking different variables, we came to know that the greater risk factor for MI is stress, hypertension, diabetes, positive family history of hypertension, abnormal lipid profile, positive family history of diabetes and MI, smoking and other heart disease

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