Assessment of Myocardial Infarction Risk among Patients in Babylon City

*Hussam Abbas Dawood
*Assistant Lecturer. University of Babylon-College of Nursing
E-mail: hussammas79@gmail.com.

الخلاصة:

تهدف الدراسة إلى تقييم العوامل المسببة للجلطات القلبية عند المرضى وذلك بسبب زيادة نسبة الوفيات الناجمة عن أمراض القلب وتصلب الشرايين في العراق[1]، حيث أصبحت الجلطات القلبية منتشرة بشكل كبير في إنحاء العالم، وبشكل خاص في البلدان التي تتحول إلي نمط الحياة الغربية. إن فكرة دراسة العوامل المسببة للجلطات القلبية تأتي لهدف تقييم نمط الحياة وتصرفات المرضى بعدما تعرضوا لجلطات قلبية[2].

المنهجية:

دراسة وصفية لتقييم العوامل المسببة للجلطات القلبية عند المرضى الذين يسكنون مدينة بابل ، وتم تصميم استبيان خاص لهدف الدراسة. 150 مريضا انتخبوا بشكل عينة عمدية من مدينة بابل لكي يشاركوا في هذه الدراسة (108 رجال، 42 إناث)، وهؤلاء هم مرضى يعانون من جلطات قلبية تمت مقابلتهم في مستشفيان مستشفى الحلة التعليمي 100 مريض، ومستشفى مرجان 50 مريضا. برامج إحصائية استعملت أثناء الدراسة لإيجاد العلاقة بين المتغيرات المختلفة للبيانات التي تم جمعها.

النتائج:

وجد أن معظم المرضى الذين شاركوا في الدراسة كانت أعمارهم أكثر من 40 عاما عند كلا الجنسين هم من الشخاص الذين يسكنون مركز مدينة بابل والذين حصلو على شهادة الثانوية والمرضى الاميين. كانت النتائج بالنسبة المئوية عند كلا الجنسين كما يلي :

65%من الرجال و 67 % من الإناث من المشاركين في الدراسة هم مرضى سكري، 81 من الرجال و 71 % من الإناث من المشاركين في الدراسة هم مرضى ضغط، بينما 59 % من أقارب الرجال و 36 % من أقارب الإناث هم مرضى قلب.

تم تقييم جميع المشاركين من حيث:

نوعية الغذاء الذين يتناولونه يوميا، عما إذا كانوا يقومون بنشاطات رياضية و عمل فيزيائي، التدخين، المعرفة، السلوك، الممارسة، عن اهتمامهم بتناول الأدوية الضرورية وقناعتهم في وصفات الطبيب. معظم المرضى ليس لديهم أي نشاط فيزيائي (86 % من الرجال، 98 % من الإناث)، لا يتبعوا حمية غذائية (65 % من الرجال، 48 % من الإناث)، وكانت نسبة المدخنين من المرضى عالية مقارنتا مع وضعهم الصحي (60 % من الرجال، 21 % من الإناث).

الاستنتاجات:

تم دراسة العلاقة ما بين العوامل المسببة للجلطات القلبية و نمط الحياة لدى المرضى المصابين. وتبين أن الوضع الاقتصادي، والسياسي ونقص في معرفة أسباب المرض وكيفية الوقاية منه من أهم العوامل التي أدت إلى خلل في نمط حياتهم والتي أدت إلى تدهور وضعهم الصحي وتعرضهم لنوبات قلبية ثانية وثالثة. كما وبينت الدراسة بأن المرضى الذين يعانون من جلطات قلبية لهم بحاجة إلى برامج تأهيلية بالتعاون مع أخصائي القلب و الممرضين ومراكز الرعاية الصحية الاولية .

الكلمات الرئيسية: التقييم ، احتشاء عضلة القلب ، عوامل الخطر، مرض السكري، مؤشر كتلة الجسم .

Abstract

Introduction

The idea of assessment of myocardial infarction risk factors among patients comes while Cardiovascular disease is the leading cause of death in Iraq.[1] While myocardial infarction has been described to have an epidemic like spread all over the world with special emphasis on countries experiencing the transition to lifestyle, it is important to evaluate the life style and behaviors of those patients after the onset of myocardial infarction.[2]

Objectives

Presented study aimed to assess and find out the frequency and significance of known risk factors in our patient population in Babylon City of myocardial infarction patients.

Materials and Methods

Descriptive design for risk factors of myocardial infarction among patients life in Babylon City were assessed.150 patients were a purposive sample from Babylon community to participate in this study (108 Male, 42 Female). Those are patients with myocardial infarction included from two main hospitals an Al-Hilla hospital n=100, Marchan hospital n=50, CCU unit. Microsoft Excel and SPSS software were used to analyze the data collected and to obtain results.

Results

Most of sample study participants were more than 40 years old. The majorities of participants live in Babylon city, finished their secondary level of education and illiteracy patients level. The results according to the gender were 64.81% of males and 66.67% of females of the study sample were diabetic, and 80.56% of males and 71.42% of female of the study sample were hypertensive, while 59.26% of males and 35.71% of females of the study sample electives had cardiac diseases. All participants were surveyed for diet, physical activity, smoking, knowledge, attitude, practice, and drugs compliance. Most of patients have no physical activity (86% of males and 98% of females), no control diet (65% of males and 48% of females), while percent of smoking patients were high according to their health situation (60% of males and 21% of females).

Conclusion

The political and economical situations of Patients in Babylon city, and lack of health information among patients and their families, were the major reason of the lifestyle impairment. Patients who survived acute myocardial infarction need more attention and rehabilitation programs, this needs the efforts of primary health care centers, Nurses and cardiologists.

Key wards: Assessment, Myocardial Infarction, Risk Factors, Diabetes Mellitus, BMI.

(تقييم العوامل المسببة للجلطات القلبية عند المرضى في مدينة بابل)

Introduction :

Acute myocardial infarction (MI) remains a leading cause of morbidity and mortality worldwide. Myocardial infarction occurs when myocardial ischemia, a diminished blood supply to the heart, exceeds a critical threshold and overwhelms myocardial cellular repair mechanisms designed to maintain normal operating function and homeostasis. Ischemia at this critical threshold level for an extended period results in irreversible myocardial cell damage or death.

Critical myocardial ischemia can occur as a result of increased myocardial metabolic demand, decreased delivery of oxygen and nutrients to the myocardium via the coronary circulation, or both. An interruption in the supply of myocardial oxygen and nutrients occurs when a thrombus is superimposed on an ulcerated or unstable atherosclerotic plaque and results in coronary occlusion.[3] A high-grade (>75%) fixed coronary artery stenosis caused by atherosclerosis or a dynamic stenosis associated with coronary vasospasm can also limit the supply of oxygen and nutrients and precipitate an MI. Conditions associated with increased myocardial metabolic demand include extremes of physical exertion, severe hypertension (including forms of hypertrophic obstructive cardiomyopathy), and severe aortic valve

shown to reduce the risk of MI significantly. A full summary of the National Heart, Lung, and Blood Institute's JNC 7 guidelines published in 2003 is available online.[9]

Certain components of tobacco and tobacco combustion gases are known to damage blood vessel walls. The body's response to this type of injury elicits the formation of atherosclerosis and its progression, thereby increasing the risk of MI. A small study in a group of volunteers showed that smoking acutely increases platelet thrombus formation. This appears to target areas of high shear forces, such as stenotic vessels, independent of aspirin use.[10] The incidence of atherosclerotic vascular disease and MI is higher in men than women in all age groups. This gender difference in MI, however, narrows with increasing age.

A family history of premature coronary disease increases an individual's risk of atherosclerosis and MI. The cause of familial coronary events is multifactorial and includes other elements, such as genetic components and acquired general health practices (e.g. smoking, high-fat diet)[11].

The level of cholesterol in the bloodstream greatly affects the risk of developing heart disease. The higher the level of blood cholesterol, the greater the risk for heart disease or heart attacks. When there is too much cholesterol (a fat-like substance) in the blood, it builds up in the walls of arteries. Over time, this buildup causes arteries to become narrowed, and blood flow to the heart is slowed or blocked. If the blood supply to a portion of the heart is partially or completely cut off, a heart attacks results.[12]

Cardiovascular diseases account for 12 million deaths annually throughout the world. MI continues to be a significant problem in industrialized countries and is becoming an increasingly significant

stenosis. Other cardiac valvular pathologies and low cardiac output states associated with a decreased mean aortic pressure, which is the prime component of coronary perfusion pressure, can also precipitate MI.[4]

A consensus statement was published to give a universal definition of the term myocardial infarction. The authors stated that MI should be used when there is evidence of myocardial necrosis in a clinical setting consistent with MI.[5]

A more common clinical diagnostic classification scheme is also based on electrocardiographic findings as a means of distinguishing between two types of MI, one that is marked by ST elevation, and one that is not. [6]

Myocardial infarction is the leading cause of death in the United States and in most industrialized nations throughout the world. Approximately 450, 000 people in the United States die from coronary disease per year.[7]

Six primary risk factors have been identified with the development of atherosclerotic coronary artery disease and MI: hyperlipidemia, diabetes mellitus, hypertension, tobacco use, male gender, and family history of atherosclerotic arterial disease. The presence of any risk factor is associated with doubling the relative risk of developing atherosclerotic coronary artery disease.[3]

Elevated levels of total cholesterol, LDL, or triglycerides are associated with an increased risk of coronary atherosclerosis and MI. Levels of HDL less than 40 mg/dL also portend an increased risk. A full summary of the National Heart, Lung, and Blood Institute's cholesterol guidelines is available online.[8]

High blood pressure (BP) has consistently been associated with an increased risk of MI. This risk is associated with systolic and diastolic hypertension. The control of hypertension with appropriate medication has been

were prepared, based on comprehensive review of the related Literature.

For collecting the data the form divided to three parts each item was scored as (yes) for agreement and (no) for disagreement

The form includes the following:

1. Demographic data such as the age, gender, educational status , marital status, occupation and area of residency .

2. General information such as the chronic disease include smoking ,family history and other chronic disease which the client suffering from consist 6 items.

3. Information related to the patient nutrition ,exercise and weight and height. The items extended to assess patient awareness for signs and symptoms and the time when they should seek for specialist consultation, consist 3 items .

The data was collected by distributing this form to the participant before discharge from coronary care unit.

Statistical analysis:

Microsoft excel and SPSS used to analyze the data, which include the following calculated values, Mean, Standard deviation, Errors and frequency.

Results:-

Age, Sex profile of study sample:

Age: Four out of five patients in the study sample with coronary artery disease were 50 years of age or older. Table (1) shows the percentage and the numbers of different age pattern of the study sample**.**

problem in developing countries. Mortality/Morbidity: Approximately 500,000-700,000 deaths are caused by ischemic heart disease annually in the United States. One third of patients who experience will die within 24 hours of the onset of ischemia and many of the survivors will suffer significant morbidity.[13]

Objectives:-

1- To identify the demographical data of the sample population.

2- To find out the frequency and significance of known risk factors in our patient population in Babylon City.

3- To assess the knowledge, Attitude and Practice of myocardial infarction patients toward change their lifestyles and others factors.

Design descriptive design was used. The study included 150 patient & this study was carried out during the period between the periods October 5. 2012 to April 20. 2013 in cardiac center in Marjan Hospital and Al–Hilla teaching hospital in Babylon City. The convenience sample consisted of (150) patient (42 female and 108 male) who admitted to the cardiac words for treatment after the MI attack . The inclusion criteria to select the sample were the following: Patients agree to participate in the study, not less than 20 years old. Face to face interview performed with the patients during waiting time.

Methods:

 A form to determinate the risk factors for patients with coronary artery diseases

Table (1) Age and gender profile

Age	Male		Female		*Total
	#	%	#	%	
Less than 30 years.	5	4.63	1	2.38	6
30-40 years	34	31.48	14	33.33	48
More than40 years	70	64.81	26	61.90	96
Total	108	100%	42	100%	150

*Total represents the sample size of both sexes**.**

Males:

From the study sample there were 4.63% less than 30 years, 31.48% between 30-50 years, and 64.81% more than 40 years old.

Females:

From the study sample there were 2.38% less than 30 years old, 33.33% between 30-50 years old, and 61.90 more than 40 years old.

Table (2) Place of residency and gender profile.

Place of residency	Male		Female		
	#	%	#	%	*Total
City	51	47.22	19	45.24	70
Village	37	34.26	14	33.33	51
Refugee camp	20	18.52	9	21.43	29
Total	108	100%	42	100%	150

*Total represents the sample size of both sexes

Table 2 shows that, the study sample distributed into the following

percentages according to the place of residency and sex.

Females:

From the study sample there were 45.24% live in Babylon city, 33.33% live in Babylon villages, and 21.43% live in Babylon Refugee camps.

Males:

From the study sample there were 47.22% live in Babylon city, 34.26% live in Babylon Villages, and 18.52% live in Babylon Refugee camps.

Table (3). Life style and gender profile

State		Yes		No		
		#	%	#	%	*Total
Smoking	M	65	60.19	43	39.81	108
	F	9	21.43	33	78.57	42
Total		74		76		150
Physical activity	M	15	13.89	93	86.11	108
	F	1	2.38	41	97.62	42
Total		16		134		150
Work	M	56	51.85	52	48.15	108
	F	11	26.19	31	73.81	42
Total		67		83		150
Diet control	M	38	35.19	70	64.81	108
	F	22	52.38	20	47.62	42
Total		60		90		150

*Total represent sample size according to sex Smoker: who smoke more than 10 cigarettes .Physically: active means engaging in regular sport or a like .

and 26.19% of females of the study sample had work or profession. And 35.19% of males and 52.38% of females of the study sample follow a control diet program.

From study sample, table(3) shows that 60.19% of males and 21.43% of females of the study sample were smokers. About, 13.89% of males and only 2.38% of females of the study sample were physically active. Also, 51.85% of males

Table (4) Educational level and gender profile.

Level of education	Male		Female		
	#	%	#	%	*Total
Illiteracy	36	33.33	17	40.48	53
Secondary	58	53.70	19	45.24	77
Diploma	4	3.70	2	4.76	6
Bachelor and above	10	9.26	4	9.52	14
Total	108	100%	42	100%	150

*Total represents the sample size of both sexes

the patient's knowledge concerning aspects to empower patient's self-management and included, knowledge about different risk factors of myocardial infarction were studied as described in table (3.7). While practices are daily activities that provide patients with self-control of the diseases that delay or prevent disease complications. These are usually following diagnosis; table 3.7 shows the number of patients in the study sample having knowledge attitude and practice or not according to sex.

Table (4) shows that the males of study sample distributed into the following percentages according to their educational level, 33.33% Illiterate, 53.70% finished their secondary level, 3.70% finished their diploma level, and 9.26% have Bachelor and above level. While females educational level were 40.48% illiterate, 45, 24% finished their secondary level, 4.76% finished their diploma level, and 9.52 had Bachelor and above level. 3.5 Knowledge attitude and practice (KAP): Knowledge test was carried to evaluate

Table (5) Obesity and gender profile of the sample study

	Status	Male		Female		*Total
		#	%	#	%	
BMI	Obese BMI>30	7	6.48	3	7.14	10
	Over weight 25<BMI<30	8	7.41	6	14.29	14
	Normal 18.5<BMI<24.9	22	20.37	14	33.33	36
	Under weight BMI <18.5	71	65.74	19	45.24	90
	Total	108	100%	42	100%	150
Waist	Over 90	14	12.96	10	23.81	24
	Less than 90	94	87.04	32	76.18	126
	Total	108	100%	42	100%	150

*Total represents the sample size of both sexes.

males and 45.23% of females of the study sample were underweight. 12.96% of males and 23.81% of females of the study sample had waist circumference over 90cm. 87.04% of males and 76.18% of female of the study sample had waist circumference less than 90cm.

Table (5) describe that 6.48% of males were obese, while 7.14% of females were obese.
7.41% of males and 14.29% of females of the study sample were overweight. 20.37% of males and 33.33% of females of the study sample were normal. 65.74 of

Table (6) Knowledge Attitude and Practice profile

Behavior	Male		Female	
	Yes	No	Yes	No
Knowledge	61	47	16	26
Total	108		42	
%	56.48	43.52	38.10	61.90
Attitude	24	84	35	7
Total	108		42	
%	22.22	77.78	83.33	17.67
Practice	38	70	18	24
Total	108		42	
%	35.19	64.81	42.86	57.14

myocardial infarction risk factors were 16. 22.22% of males and 83.33% of females have attitude toward myocardial infarction prevention, while 77.78% of males and 17.67% of females have no attitude about

From table (6), 56.48% of males and 38.10% of females, have a knowledge about myocardial infarction risk factors, while 43.52% of males and 61.90% of females, have not a knowledge about

while 64.81% of males and 57.14% of females did not practice their myocardial infarction prevention.

myocardial infarction prevention. 35.19% of males and 42.86% of females practice their myocardial infarction prevention,

Table (7) Compliance profile

Behavior	Male		Female	
	Yes	No	Yes	No
Take drugs on time	53	55	22	20
Total	108	108	42	42
Percentage	49.10	50.90	52.38	47.62

lifestyle). While 50.90% of males and 47.62% of females, did not practice the order of their

cardiologist or general physician. 3.8 The presence of other chronic diseases among study sample:

From the study sample, about 49.10% of males and 52.38% of females keep their practice of myocardial infarction prevention according to cardiologist and general physician order (like medications described, and how they must manage their risk factors and change their

Table (8) Chronic diseases profile.

Disease		Yes	No	Yes %	No %	Total
Diabetes Mellitus	Male	70	38	64.81	35.19	108
	Female	28	14	66.67	33.33	42
Renal	Male	3	105	2.78	97.22	108
	Female	3	39	7.14	92.86	42
Hypertension	Male	87	21	80.56	19.44	108
	Female	30	12	71.42	28.58	42
Asthma	Male	4	104	3.70	96.30	108
	Female	4	38	9.52	90.48	42
Nothing	Male	23	35	21.30	78.70	108
	Female	4	38	9.52	90.48	42

About 3.70% of males and 9.52% of females of the study sample had asthma. About 21.30% of males and 9.52% of females of the study sample had no clinical illness. 8 The presence of chronic diseases among relatives of study sample:

About 64.81% of males and 66.67% of females of the study sample had diabetic. About 2.78% of males and 7.14% of females of the study sample had renal. About 80.56% of males and 71.42% of females of the study sample had hypertension.

Table (9) chronic diseases profile (Relatives).

Disease		Yes	No	Yes %	No %	Total
Diabetes Mellitus	Male	64	44	59.26	40.74	108
	Female	22	24	52.38	47.62	42
Hypertension	Male	76	32	70.37	20.63	108
	Female	25	17	59.52	40.48	42
Stroke	Male	9	99	8.33	91.67	108
	Female	5	37	11.90	88.10	42
Cardiac diseases	Male	64	44	59.26	40.74	108
	Female	15	27	35.71	64.29	42

Relatives mean: father, mother, brother, sister

Babylon city were relatively equals. The study show the high incidence of myocardial infarction in the city, villages and refugee camps, this is due to the political situations,, and bad economical situations which borne of high smoking, low exercises, low diet control (Table 2).

60.19% of males and 21.43% of females of the study sample were exported to be smokers, (smoke more than 10 cigarettes), (Table 3). Males reported more smoker than females; they have more stress and more responsibility in their life due to the economical and political situation. While females have social barriers to be smoking, (socially not accepted), except those who face a difficult situations due to their health, economy, or family conditions, they try to cope with smoking. Cigarette smoking increases the risk of coronary heart disease by itself. When it acts with other factors, it greatly increases risk. Smoking increases blood pressure, decreases exercise tolerance and increases the tendency for blood to clot,[14]. Cigarette smoking is the most important risk factor for young men and women. It produces a greater relative risk in persons under age 40 than in those over 40 years old,[14].

Only 13.89% of males and 2.38% of females of the study sample engaged in regular schedule for sport, (Table 3). 51.85% of males and 26.19% of females of the study sample had a work, (Table 3). Age and sex affect physical activities profile negatively according to the social acceptance and severity of disease, in our study; most of patients were in elderly, (> 50 years old), So it is socially not accepted for them to be engaged in a scheduled sport or physical activities, their health situation need a physician follow up during their engagement in sport or physical activity. An inactive lifestyle is a risk factor for coronary heart disease. Regular, moderate-to-vigorous physical activity helps prevent heart and blood vessel disease [14]. Regular exercise is a

About 59.26% of males and 52.38% of females of the study sample relatives were diabetic.

About 70.37% of males and 59.52% of females of the study sample relatives were hypertensive. About 8.33% of males and 11.9% of females of the study sample relatives were stroke. About 59.26% of males and 35.71% of females' relatives were cardiac diseases.

Discussion

This study was conducted to assess and identify the risk factors of myocardial infarction among patients having ischemic heart disease and live in Babylon City.

Demographic profiles:

Most of the sample in the study was more than 40 years (64.81% males, 61.9% females); followed by 31.48% males and 33.33% females aged 30-50 years, while only 4.63% males and 2.38% females aged less than 30 years old, (Table 1). These results were expected because age is considered as one of the major risk factors of myocardial infarction, Over 83 percent of people who die of coronary heart disease are 65 or older[14]. Since we are dealing with myocardial infarction patients one should expect that the majority of participants were of the elderly (>50 years old) group, [15]Most of the sample in the study was males; they represent about 72% of our study, while females were 28%, (sample size 150). Men have a greater risk of heart attack than women do, and they have attacks earlier in life. Even after menopause, when women's death rate from heart disease increases, it's not as great as men's [14].

47.22% of males and 45.24% of females of the study sample live in Babylon city, 34.26% of males and 33.33% of females of the study sample live in Babylon villages, while 18.5% of males and 21.43% of females of the study sample live in Babylon refugee camps. The percentage of males and females live in

high calories full of fat and carbohydrates, and having no physical activity during their free times. The patients must know that, the food is made up of water, fat, protein, carbohydrate and various vitamins and minerals, too much fat -- especially in waist area – make you at higher risk for health problems, including high blood pressure, high blood cholesterol, diabetes, heart disease and stroke,[14] .

12.96% of males and 23.81% of females had a waist circumference over 90cm. 87.04% of males and 76.18% of females of the study sample had waist circumference less than 90cm (Table 5). Women still more obese than men, as we talk above, women stay at home for long time this encourage them to eat more than men. [18] .

Table (6) shows that 56.48% of males and 38.10% of females of the study sample, had knowledge about myocardial infarction risk factors, while 43.52% of males and 61.90% of females of the study sample had not a knowledge about myocardial infarction risk factors.

While knowledge is important as a test to evaluate the patient's knowledge concerning aspects to empower patient's self-management, it is important to empower the value of knowledge about how to manage the controllable risk factors of all chronic diseases especially infarction. 22.22% of males and 83.33% of females of the study sample had attitude toward myocardial infarction prevention, while 77.78% of males and 17.67% of females of the study sample had no attitude about myocardial infarction prevention.

Attitude means that the patients with the idea of myocardial infarction prevention protocols and programs [18] . 35.19% of males and 42.86% of females of the study sample practice their myocardial infarction prevention, while 64.81% of males and 57.14% of females of the study

major way to reduce the risk of having a further MI. So our physicians must educate the patients about how to engage in physical activity regularly.

35.19% of males and 52.38% of females of the study sample control their diet consumption, (Table 3). Control diet means that patient take in consideration the types of food they eat daily according to their health situation or medical illness. The results of our study recommended that it is important to facilitate the relationship between patients, dietitian and health promoters, in order to achieve the goal of the study [14]. There is some evidence that eating oily fish (herring, sardines, mackerel, salmon, kippers, pilchards, fresh tuna, etc) helps to protect against heart disease, [16]. Fruit and vegetables contain 'antioxidants' and vitamins which may help to prevent atheroma building up on the vessels,[17]

33.33% of males and 40.48% of females of the study sample were illiterate, (Table 4). This may be due to our culture and political situation that make women in many cases responsible for their families and home job. Only 9.26% of males' and9.56% of females of the study sample finished their university degree level, (Table.4). While most of study sample participants were above 50 years old, it is expected to have low percent of participants who finished their university degree level. 53.7% of males and 45.24% of females of the study sample stop their education in secondary level.

6.48% of males and 7.14% of females of the study sample were obese, 7.41% of males and 14.29% of females of the study sample were overweight, while 20.37% of males and 33.33% of females of the study sample were normal, but 65.74% of males and 45.24% of females of the study sample were underweight (Table 5). The result of overweight among myocardial infarction patients still high, this was due to many reasons, type of food which has

pressure usually has no symptoms. It's truly a "silent killer." The pressure in the blood vessels depends on how hard the heart pumps, and how much resistance there is in the arteries. It is thought that slight narrowing of the arteries increases the resistance to blood flow which increases the blood pressure. The cause of the slight narrowing of the arteries is not clear. Various factors probably contribute, [14]Treatment by altering any relevant lifestyle factors is important. In addition, medication is usually advised if blood pressure remains at 160/100 mmHg or above despite a period of observation and tackling any lifestyle factors. 64.81% of males and 66.67% of females of the study sample had diabetic. Diabetes increases the risk for AMI attack rate, incidence, case- fatality, recurrence and mortality and is an important contributor to all AMIs in middle-aged people. These results indicate that the major two risk factors associated with the sample study are diabetes and hypertension. So if the patients try to manage these two risk factors (lifestyle changes or by medications), they will prevent high proportion of the second heart attack.

Cardiac diseases and stroke among relatives of patients:

This section can describe the proportion of genetic factors or a family history. 59.26% of male and 64.29% of female of the study sample relatives had cardiac diseases. This percent is considered high, while like these factors cannot be prevented but it can be managed by managing of other risk factors (risk factors that can be prevented) [14]. 8.33% of male and 11.9% of female of the study sample relatives had stroke. This percent is considered small compared with cardiac diseases proportion. But we cannot neglect it we can educate patients with a family history about how to prevent the first, second and third occurrence. Like cardiac diseases family history, patients can control the controllable risk

sample did not practice their myocardial infarction prevention. Practice their myocardial infarction prevention means that they work on the controllable risk factors to decrease the risk of second or third heart attack. Questionnaires were aimed towards identifying knowledge, attitude and practice with regard to primary and secondary prevention of heart disease. In general, greater knowledge, attitude and practice must be founded among post-infarction patients.

It is possible to shift practice if the evidence of benefit is strong, it means that if there are strong benefits from the action of patients toward myocardial infarction prevention, while patients alone cannot manage their risk they need the action of medical physician, public health physician, pharmacist, Nurses and allied medical technicians as a medical team to encourage drug and other compliance of patients. Access to a cardiologist is associated with better survival compared to no access to a cardiologist among a cohort of patients already admitted with AMI. This effect is mainly due to the more frequent use of effective medicines by the group referred to cardiologists. Hospitals may improve care between cardiologists and general physicians (Table 7).

64.81% of males and 66.67% of females of the study sample had diabetic. 2.78% of males and 7.14% of females of the study sample had Renal. 80.56% of males and 71.42% of females of the study sample had hypertensive. 3.70% of males and 9.52% of females of the study sample had asthma. 21.30% of males and 9.52% of females of the study sample had no clinical illness.(Table 8).

Most patients admitted to the two hospitals are hypertensive patients. High blood pressure directly increases the risk of coronary heart disease which leads to heart attack and stroke, especially along with other risk factors. High blood

cardiologists. 4- Providing a follow up centers for chronic diseases prevention and health promotion to decrease the incidence of many chronic diseases especially ischemic heart diseases, this can be achieved through Decision makers. 5- Rehabilitation programs for all patients survive a heart attack (MI), to prevent the complications of the heart attacks.

References

1. Al Gersha,K:. effect of Nursing Education program on recovery following cardiac Surgery:Intervention study, Unpublished doctorate Dissertation, College of Nursing ,University of Baghdad,pp.11-12.
2. Woods, S. ; Froelicher, E.; Motzer, S.: Cardiac Nursing, 4th edition, Philadelphia: Lippincott Williams and Wilkins, 2000, PP. 584-590.
3. Cotran RS, Kumar V, Robbins SL (eds)(1994): Robbins Pathologic Basis of Disease. 5th ed. Philadelphia: WB Saunders.
4. Rubin E, Farber JL (eds)(1995): Essential Pathology. 2nd ed. Philadelphia: JB Lippincott.
5. Thygesen K, Alpert JS, White HD(2007). Joint ESC/ACCF/AHA/WHF Task Force for the Redefinition of Myocardial Infarction: Universal definition of myocardial infarction. Eur Heart J, 28: 2525-2538.
6. Andreson J, Adams C, Antman E, et al: ACC/AHA (2007) guidelines for the management of patients with unstable angina/non-ST elevation myocardial infarction: A report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines. J Am Coll Cardiol. 2007, 50: e1.
7. American Heart Association. Cardiovascular disease statistics (2009). Available at http://www.americanheart.org/presenter.jhtml?identifier=4478 (accessed March 2).
8. Adult Treatment Panel III. Detection, evaluation, and treatment of high blood cholesterol in adults (2009). Available at http://www.nhlbi.nih.gov/guidelines/cholesterol (accessed March 2).
9. National Heart, Lung, and Blood Institute. The seventh report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of

factors. Insulin resistance with impaired glucose tolerance factor for type 2 diabetes and Coronary Heart Disease (CHD). It is linked with each of the metabolic criteria for diagnosis of `metabolic syndrome (Table 9).

Conclusion:-

There is scope for lifestyle change in reducing AMI risk, by changes in physical activity, smoking and dietary habits. In addition, measures to control hypertension and diabetes should be given a high priority in any national health policy to prevent AMI. While some patient becomes stress due to the political, social and economical situation, we must educate patients and public a like about how to manage these stressors or to cope with it. Myocardial infarction patients must have knowledge about their clinical illness and how they will behave to prevent its complications. All patients must have an attitude about prevention of their clinical illness, and it is not enough but they need to practice the protocols and programs recommended for that prevention.

Recommendations:

1. It is essential to adopt international recognized protocols for primary, secondary and tertiary prevention, diagnosis, treatment and follow up for myocardial infarction patients, and it is the function of both bio-physician (general physician and specialist) and primary health care provider at all sectors public and private. 2. As diet is one of the major risk factors of myocardial infarction, it is essential to find the most effective diet protocol and supply it to myocardial infarction patients in order to lose their weight, this can be done cooperated with qualified dietitian. 3-. It is important for patients to follow physical activities hourly every day; this must be followed up by health promoters, public health specialist, physicians and

Available   at (http://www.americanheart.org/presenter.j html?identifier=4478 (accessed March 2).

15 . Epstein AE, DiMarco JP, Ellenbogen KA, et al: ACC/AHA/HRS (2008) guidelines for device-based therapy of cardiac rhythm abnormalities: Executive summary: A report of the American College of Cardiology/American Heart Association   Task Force on Practice Guidelines. J Am Coll Cardiol. 51: 2085-2105.

16. Rashid Chaudhry, Fahd A Chaudhry. Research in Primary prevention of Coronary Artery Disease, Pakistan Heart J Dec 2002;35(1-4):26-36.

17. Dr. Hawash, Yaqoob(22.4.2006), the cause of ischemic heart diseases among Palestinians in young age, research. Page 13.

18. Lloyd-Jones D, Adams RJ, Brown TM, Carnethon M, Dai S, De Simone G, et al;(2010) On behalf of the American Heart Association Statistics Committee and Stroke Statistics Subcommittee. Heart disease and stroke Statistics -2010 update : aReport from the American Heart Association. Circulation.121(7):e46-e215.

High Blood Pressure(2009). Available at http://www.nhlbi.nih.gov/guidelines/hype rtension (accessed March 2).

10. Hung J, Lam JYT, Lacoste L, Letchacovski G(1995). Cigarette smoking acutely increases platelet thrombus formation in patients with coronary artery disease taking aspirin. Circulation. 92: 2432-2436.

11. Antman E, Hand M, Armstrong P, et al: 2007 focused update of the ACC/AHA 2004 Guidelines for the Management of Patients with ST-Elevation Myocardial Infarction: A report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines. J Am Coll Cardiol. 2008, 51: 210-2147.

12. Heart and Age Journal, You Can Prevent and Roll-Back Atherosclerosis, and Decrease Your Risk for Heart Attack and Stroke(2005) - Article XV (Part 1 of 4), September 21.

13. Med Today. Department of Family Medicine, Aga Khan University,
Karachi, Metabolic Syndrome - A silent killer. Mar 2005;3(1):3.

14 . American Heart Association. Cardiovascular disease statistics(2009).