Coronary Ischemia Study for Patients Admitted to Damascus Hospital Under the Age of Forty Years

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Abstract

Introduction: Coronary artery disease is a common heart condition that involves the formation of atherosclerotic plaques in the lumen of blood vessels. This study describes the evaluation, diagnosis, and management of coronary artery disease and highlights the role of the health care team in the evaluation and treatment of patients with this condition.

Materials And Methodology: A cross-sectional study targeting 200 patients under the age of 40 attending a Damascus hospital with coronary ischemia.

Results: We extracted, by interpreting the results of the descriptive statistics and applying the Chi-Square tests and ANOVA, many interesting results regarding the assessment of coronary heart injury in patients admitted from the age groups younger than 40, and we found a concentration of infection in the ages. At older ages, as it develops in adults younger than 40 years old.

Recommendations: One of the most important recommendations of our study is to ascertain the reasons for the absence of this relationship in the age groups younger than 40 years, and to search for other non-traditional risk factors that may be useful in determining the causality behind the increasing incidence of coronary heart diseases in unusually young age groups.

Keywords: cardiac; cardiovascular systems; patients

1.Introduction

Coronary artery disease is a condition in which there is a lack of blood supply and oxygen to the heart muscle. It results from occlusion of the coronary arteries and results in a mismatch between supply and demand for oxygen. [1]

At the beginning of the 20th century, it was an uncommon cause of death. Mortality from coronary heart disease peaked in the mid-1960s and then declined, but it remains the leading cause of death worldwide. [2]

It has been observed that the incidence of coronary heart disease increases with age, regardless of gender. In the ONACI registry in France the incidence of coronary heart disease was about 1% in the age group 45 to 65 years, which rose to about 4% in the age group 75 to 84 years. [3]

Disease prognosis depends on several factors, some of which can be modified while others are not. The patient's age, gender, family history and genetics, ethnicity, eating and smoking habits, compliance with medications, availability of health care and financial status, and the number of arteries involved are some of the factors. [4]

Medical and surgical treatment of ischemic heart disease is associated with its side effects and complications. These unwanted effects can be mitigated by careful selection, physician experience, and patient education. [5]

Study Aimes:

- Determining the most important risk factors for cardiac ischemia for those under 40 years of age.
- Investigating the main causes of cardiac ischemia for those under 40 years old.
- Studying the relationship between cardiac ischemia and many other studied variables.

2. Methods

study design

An Observational, Cross-Sectional Study.

This study targeted the patients of Damascus Hospital. Where the sample was chosen randomly, and about (200) patients were selected who met

specific acceptance criteria, the most important of which is the presence of adequate information in the dossier, while all patients were excluded according to specific exclusion criteria.

Inclusion criteria: Damascus hospital patients between the factors of 2018 and 2022 with ischemic heart failure and who are less than 40 years old, and who are being followed up in the hospital.

Exclusion criteria: patients who were not followed up and treated in the hospital, patients who have a lack of information that serves file search.

Study location: Damascus Hospital, Syria

Study time: from 7/1/2022 to 10/1/2022

Data collection tool:

The data related to this study was collected using Questionnaire forms. These forms were designed by the student responsible for the research under the supervision of the professor responsible for the thesis. The information necessary to fill out these forms was collected by returning to the files of the Cardiology Department in the archives of Damascus Hospital.

Ethical approval:

Official approval was obtained from the Deanship of the Faculty of Human Medicine at the Syrian Private University to carry out the research, and informed consent was obtained from the students to participate in this thesis.

Statistical Analysis:

These data from the paper forms were entered into the SPSS version 25 file to be analyzed and the results for this study were found. Where the descriptive analysis (frequencies and percentages) was found for all the variables in the study, and the inferential analysis included studying the presence of relationships and correlations between many of the studied variables using the Chi-square test.

3. Results

The descriptive study of the sample variables (Table 1)

We start our study of coronary ischemia cases for patients admitted to Damascus Hospital by describing the demographic information of the studied sample in detail as follows, and we start by referring to the sex of the patients admitted, and we find that only one-fifth of the cases were females, while the rest of the cases were males, and here we refer to a male to female ratio of 5:1.

On the other hand, we talk about an important factor in the context of the study of coronary heart diseases related to the study of the distribution of the sample members in terms of age. This shows that CHD tends to be concentrated in older age groups, as expected. And by dividing the sample into 3 main age groups, we find that the majority of ages are concentrated within the age group of 31-40, with a rate of 87.5.

After detailing the specifications of our sample in terms of gender and age, we move on to describe a group of habits and basic factors that contribute to measuring the risk of developing and warning coronary syndrome in different ages, especially those under 40 years old, and starting with smoking habits, and in our sample the greatest percentage of The accepted patients are mainly cigarette smokers, as their percentage is 62%, while a third of the patients are non-smokers, and a small percentage of them, about 4.5%, are hookah smokers. As for estimating the amount of smoking among smokers, we asked the question about the number of cigarettes that patients usually smoke per day, and here we found that the average number was about 17 cigarettes per day on average.

With regard to alcohol habits, we also seek here to correlate them with coronary heart disease of the sample members, and here we find that the majority of the sample do not drink alcoholic beverages by 93.5%, while a small percentage drink it regularly.

only one third of the patients from our studied sample whose age is less than 40 years suffer from high arterial pressure, only 34% of them. As for discussing diabetes as an important risk factor for infection, we find that only about a quarter of the sample suffers from diabetes, or 23%. With regard to high cholesterol values among accepted patients, we find positive cases in only about 14.5% of the sample members.

Next, we will separate the most common complaints associated with coronary heart injury in admitted patients. We note, as expected, that the most common symptom is chest pain, which in about half of the cases shows a transition between the shoulder, arm, elbow, back and jaw, and is also associated with 56% sweating. And a feeling of dizziness in one third of the cases.

With regard to the distribution of the sample members according to the type of coronary heart disease that occurred, we find here that the vast majority are patients with acute coronary syndrome 97% of its different types, while only 3% of them suffer from stable angina, and accordingly we will conduct our subsequent study to link each of the factors The previous risk is due to the occurrence of each of the two cases in detail and with standard statistical tests.

Variable		Frequency (n)	Percent (%)
Age	Less than 20 years 21-30 years 31-40 years	1 24 175	0.5 12 87.5
Gender	Male Female	158 42	79 21
Smoking	non-smoker cigarette smoker hookah smoker	67 124 9	33.5 62 4.5
Alcohol consuming	no On occasions only yes	187 3 10	93.5 1.5 5
HTN	No yes	132 68	66 34

DM	No	154	77
	yes	46	23
High levels of cholesterol in the blood	No	171	85.5
	yes	29	14.5
Main Complain	Coincidence	1	0.5
	chest pain	185	92.5
	Breathing difficulty	46	23
	feeling dizzy	67	33.5
	sweating	112	56
	vomiting	33	16.5
	nausea	8	4
	palpitation	1	0.5
	headache	1	0.5
The type of heart disease the patient has	Stable angina	6	3
	acute coronary syndrome	194	97
Total		**200**	**100**

Table 1: Descreptive Statistics

Study of the relationship between cardiac ischemia and risk factors (Table 2)

Gender: There is usually no significant and significant association between gender and CHD in different age groups. In the context of our study, we find that the Chi-Square test confirms that there is no statistically significant relationship between gender and CHD pattern, where P-Value > 0.05.

Age: Here we find a significant and significant correlation between age and coronary heart disease pattern in individuals. Here, we find that the average age of acute coronary syndrome patients is about 35.5, which is greater than that of stable angina patients who have an average age of about 31.5, which is Remarkably in the context of our sample studied.

Smoking: With regard to smoking, we find here a correlation that can be considered statistically significant between smoking habits and coronary heart injury pattern, the value of the margin of error here is slightly less than 0.05. But in the application of the ANOVA test to understand the association of the number of cigarettes smoked per day with the coronary heart disease pattern in the accepted individuals, indicates the absence of the association as well, and here P-Value >> 0.05 confirms this and remarkably, we conclude here that the association of smoking with the pattern of heart injury Corona at ages younger than 40 years is not of significant statistical significance in the context of our sample.

Consumption of alcoholic beverages: Here we see that the relationship is not achieved and is not statistically reliable. We find that P-Value >> 0.05, and here it can be concluded that the coronary heart injury pattern in our accepted patients is not related to drinking alcohol in our studied sample.

Arterial hypertension: Likewise, here, we find that arterial hypertension does not have any statistically reliable effect on the pattern of coronary heart injury, especially in the age group of the studied sample less than 40 years, where P-Value >> 0.05.

Family history: For this factor, here also the results of Chi-Square test application indicate that there is no association between the family history of a history of coronary heart injury or ischemia, with the occurrence of a certain pattern of coronary heart disease patterns (stable angina or coronary heart syndrome in patients younger than 40 years.

Diabetes Mellitus: Table 26 shows a detail of the Chi-Squared test that links the history of diabetes in the admitted patients with their coronary heart disease pattern, and here we see that the relationship is unrealized and not statistically reliable, so we find that P-Value >> 0.05, and here it can be concluded that the coronary heart disease pattern in our accepted patients is not associated with diabetes mellitus in our studied sample of patients under the age of 40 years.

High cholesterol: With regard to high cholesterol values in our eye patients, here also the results of the application of the Chi-Square test indicate that there is no association between the presence of high blood cholesterol values, and the occurrence of a certain pattern of coronary heart disease patterns (stable angina or coronary heart syndrome in younger patients from 40 years old.

We conclude here that all the risk factors for coronary heart disease of all kinds, which showed a common and usually high correlation with injuries in large age groups, appear less common and less correlation in age groups younger than 40, remarkably in our studied sample of coronary heart disease patients admitted to Al-Mujtahid Hospital. With the exception of smoking, which is correlated, albeit statistically insignificant.

		The type of heart disease the patient has		P. Value
		Stable angina	acute coronary syndrome	
Gender	Male	6	152	0.23
	Female	0	42	
Age		31±7	35±4	0.01

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Smoking	non-smoker cigarette smoker hookah smoker	1 3 2	66 121 7	0.02
Alcohol consuming	no On occasions only yes	5 0 1	182 3 9	0.39
HTN	No yes	2 4	130 64	0.08
DM	No yes	3 3	151 43	0.11
High levels of cholesterol in the blood	No yes	4 2	167 27	0.18
Do any of your relatives (father, mother, brothers, grandfather, grandmother) have a history of ischemia?	No I don't know yes	4 0 2	113 3 78	0.89
Total		6	194	

Table 2: Study of risk factors for the development of otitis media

4. Discussion

Our cross-sectional study is based on an attempt to investigate the risk factors related to coronary heart disease in patients attending Damascus Hospital in Syria. The main objective is to link our target risk factors to each type of coronary heart disease. Now we can move on to detail each factor separately:

Age:

Our study indicated that there is an important distribution of acute coronary syndrome cases within the different age groups studied, which was limited in our study within the age group younger than 40 years. 40 years, and there was no difference from the rest of the studies in this regard. As for gender, it is a neutral factor here, as is the case in the various studies mentioned [6], as the age groups in their thirties constituted the largest proportion of patients accepted, in a broad and more comprehensive study In Iran, researchers reached results and a distribution similar to what we found in this study [7], while other studies tried to focus more on the younger age groups, despite their scarcity, but it is important to try to understand the risk factors related to them [8]. Our study was also characterized by a striking distribution of ages within each type of acute coronary syndrome, which is significantly different from other previously studied populations [7].

Gender:

Our study showed the absence of the role of the patient's gender as a risk factor for the development of each type of infection, in contrast to a large study on the European continent, which showed a higher risk for females in the development of cases [9].

Family Story:

Positive family history indicates an important indicator to warn of the possibility of infection. In our studied sample, we noticed that the correlation is absent in young ages less than 40 years, where the cases that received positive family history here do not outweigh the rest of the patterns, this is referred to in a study by Jenniffer N Smith et al. In the form of an updated review, they came to a different conclusion showing that the family history

is prominent and clear in CCI of the acute coronary syndrome type, especially unstable angina [10].

Smoking:

There is no doubt that smoking is one of the most frequent risk factors among patients with the syndrome. It is remarkable in our study that the relationship was statistically proven, but it was of little importance and unreliable, especially when studying a quantitative relationship to the amount of smoking, in a study conducted by Ghazali et al, which showed a difference in the assessment of smoking. As a risk factor, the significant association in both types of acute coronary syndrome with smoking habits emerged [11].

Alcohol And Hypercholesterolemia:

As we previously emphasized, the part of the sample represented by alcoholic patients or those with hypercholesterolemia, cannot give much importance to studying their relationships as risk factors for the patterns of the syndrome.

Arterial Hypertension:

Several studies indicated that high arterial pressure, which causes atherosclerotic vascular complications, constitutes a critical risk factor in acute coronary syndrome cases. Clinical ones, but it is possible to look at them and compare them. In a single-center study conducted between 2005 and 2016 it was not surprisingly indicated that arterial hypertension was at the forefront of risk factors for the development of ST-associated myocardial infarction [12]. Despite the difference in evaluation between the two studies, the common thing is the importance of the role played by arterial hypertension and its complications in the pathogenesis of coronary heart disease, and its evaluation in age groups younger than 40 years requires further investigation and study [12, 13].

Diabetes Mellitus

The results here indicate a simulation of what was stated in arterial hypertension, here we also note its absence as a risk factor in cases of stable angina and coronary heart syndrome, and we reiterate that within the limitations of our conducted study, the importance of this relationship cannot

be judged conclusively and the matter requires more Extensive studies and research. Here we point to the importance of insulin resistance mechanisms that play a major role in the cardiac pathogenesis of diabetes, especially at the coronary level, which makes diabetes a prognostic factor and predisposing to coronary heart disease of different clinical patterns [14].

5. Recommendations

The absence of a relationship between the traditional coronary heart injury risk factors and the development of this injury prompts us to search more in two main areas in the future in broader and more comprehensive studies, namely, to ascertain the reasons for the absence of this relationship in age groups younger than 40 years, and to search for other risk factors Unconventional may be useful in determining the causality behind the increasing incidence of coronary heart disease cases in unusually young age groups.

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