

Risk Factors for Ischemic Heart Disease (IHD) Among Young and Old Age Groups Patients of District Peshawar

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Abstract

Ischemic heart disease (IHD) is an important health care problem worldwide. Various associated risk factors have been identified for the disease. Prevention of these risk factors in the public may improve the attributed mortality rate. To determine the most frequent risk factors among IHD patients of District Peshawar, Pakistan. A descriptive cross-sectional study design was adopted for this study. Adult IHD patients were recruited from two tertiary healthcare centers of Peshawar, KP Pakistan. The study patients were divided into two age groups. A questionnaire depicting demographic and clinical details of the patients was filled out for each patient. The data collected was compared between the two age groups employing SPSS version 22. A majority of the younger age group patients lacked in exercise. Smoking and hypertension were also found to be more frequent, in respective order, than other risk factors among younger age group patients. High body mass index (BMI) was the most frequent finding in the older age group patients, followed by consumption of fatty diet. Inactivity, smoking, and HTN were most frequent risk factors found in young adult CAD patients of KP, whereas fatty diet and a consequential high BMI were the most frequent findings among the older patients.

Introduction

Ischemic heart disease (IHD), also designated as coronary artery disease refers to a group of closely related syndromes caused by an imbalance between myocardial oxygen supply and its demand¹. In more than 90% of cases it is a consequence of decreased coronary blood flow secondary to obstructive atherosclerotic vascular disease². In less frequent cases it results from increased oxygen demand (hypertension), diminished blood volume (pneumonia or CHF) or diminished oxygen-carrying capacity (anemia or Carbon monoxide toxicity). The non-modifiable risk factors include age, gender and positive family history. The modifiable risk factors include hypertension (HTN), smoking, stress, diabetes mellitus (DM), obesity and sedentary lifestyle³. IHD is considered a modern epidemic by WHO in 1982⁴. In 1999 over 33.3% of all deaths in the US were due to IHD. It additionally accounts for more than 18% of disability adjusted life years (DALY) in high- income countries and more than 10% DALY in middle and lower- income countries⁵. Indo-Asian nations are reported to have the highest rates of CAD, worldwide⁶. In a previously conducted study, the Mortality rate in Pakistani population due to CAD was reported to be 410/100000 deaths per year⁷. The disease has been reported to pose a great amount of burden on health care system in various populations around the world⁸. Studies' depicting the frequency of various risk factors in different age groups of local CAD patients belonging from the province of KP is lacking. The current study was hence aimed at elucidating this data. Findings of the study will help the authorities and concerned health professionals in adopting appropriate preventive and curative measures. Thus this study was designed to identify the common risk factors of ischemic heart disease in the elderly and young patients from KP.

Methodology

This was a hospital- based descriptive cross-sectional study. IHD patients were identified at Khyber Teaching Hospital and Hayatabad Medical Complex, Peshawar. Both hospitals have well-developed cardiology units for patients with IHD. The study was conducted from April 2012 to September 2012. Adult patients of Pakistani origin with IHD of

either gender were selected. The patients were divided into two age groups, i.e. >45 years and ≤45 years. Owing to the corresponding prevalence of patients in the respective age groups, the >45 yrs age group was assigned 100 patients while the ≤45 years age group was assigned, 50 patients. Those with concomitant congenital heart diseases or other syndromes were excluded from the study. A comprehensive questionnaire, taking into account the demographic details and assessment for various IHD risk factors were filled out for all the patients by appropriately trained healthcare professionals. The data was recorded and interpreted with the help of SPSS(version22). Chi-square test was employed in comparison to qualitative variables among study patients; the coefficient interval was kept at 95%.

Results

A total of 150 IHD patients, 100 in the older adults age group of >45 years and 50 in the younger adults age group (≤45 years), were enrolled in the study. Among the study patients, 85 regularly performed exercise. The details regarding the kind and duration of exercise was not obtained. Sixty-five patients did not observe exercise at all; a majority (n=32,64%) of these were from the younger age group(Table1). On the contrary, 67% of those from older age group exercised regularly.

In this study, we found a significant number of patients (n=55, 36.66%) had been smoking cigarettes (Table1). The frequency of smokers was significantly higher (p value 0.042) in the patients from younger age group (48%).

Dietary history was obtained and compared between the two age groups. It was found that a majority of the patients in either age group took fatty diet; the difference, however, was statistically insignificant (p value 0.9).

Diabetes is a well-known risk factor for IHD. In the current study, a total of 51(34%) patients were suffering from DM. The frequency among patients from the young age group was especially high (48%) as compared to the older age group patients (27%). The difference between the two groups, however, was statistically insignificant (p value 0.10). Hypertension is another leading risk factor for IHD. In the Current study, a significantly higher number of patients (n=85,56.66%) was suffering from this disease. The frequency was significantly higher among patients from younger age group, i.e.78%, in comparison to those from the older age group (46%). Subjective mental stress was comparable among the two age groups (Table1). Similarly, a non-significant difference was obtained among the two groups when compared for different body mass index (BMI) status (Table1). A previous history of IHD in the family among blood relatives was also comparable between the two age groups (Table 1).

Table 1. Frequencies of various IHD risk factors among young and adult age groups

Study parameter		Young Age Group n(%)	Old Age Group n(%)	P-value
Exercise	Yes	18(36)	67(67)	<.001
	No	32(64)	33(33)	
Smoking	Yes	24(48)	31(31)	0.042
	No	26(52)	69(69)	
Diet	Balanced	23(46)	47(47)	0.9
	Fatty	27(54)	53(53)	
DM	Yes	24(48)	27(27)	0.10
	No	26(52)	73(73)	
HTN	Yes	39(78)	46(46)	<0.001
	No	11(22)	54(54)	
Mental Distress	Yes	16(32)	29(29)	0.705
	No	34(68)	71(71)	
BMI	Normal	15(30)	38(38)	0.393
	OverWeight	14(28)	31(31)	
	Obese	21(42)	31(31)	
Family Hx of IHD	Yes	18(36)	17(17)	0.729
	No	32(64)	83(83)	

BMI, body mass index; DM, diabetes mellitus; HTN, hypertension; Hx, history; IHD, ischemic heart disease

Discussion

The current study elicited frequencies of eight known IHD risk factors among younger and older adults of District Peshawar. HTN (n=39,78%) was the most frequently found risk factors in the younger age group patients. The incidence of HTN is on the rise in young adults suffering from IHD⁹. In a study conducted in Japan in 1990, HTN was reported as the most common IHD risk factor among young IHD patients¹⁰. Exercise has been reported to lower the incidence of IHD¹¹. In the current study, lack of exercise was found to be the second most common IHD risk factor (n=32,64%) among patients from the younger age group. This may pertain to the relatively casual behavior at younger ages as compared to the older ones. In a previous study conducted on healthy individuals from other provinces of Pakistan, a higher frequency (17%) of lack of exercise was reported¹². This advocates findings from the current study. Among patients from an older age group, the most frequent risk factor was high BMI (62%). This parameter is already reported as a common risk factor among IHD patients¹³. The higher prevalence in the current study may be attributed to the increased consumption of a fatty diet in this age group. Consumption of fatty diet was recorded to be the second most commonly found an IHD risk factor in older adults. The two age groups varied significantly for three IHD risk factors, i.e. lack of exercise, smoking and HTN. Regular exercise was more frequent among patients from older age group, whereas smoking was more common in the younger age group patients. Both these attributes pertain to the inherent casual behavior among young adults as compared to the older ones. On the whole, in the current study hypertension was the leading IHD risk factor (31.75%). Hypertension is a well-known risk factor for IHD worldwide¹⁴. Various behavioral and genetic factors may lead to HTN¹⁵. An assessment of these are suggested in Pakistani population.

Conclusion

It was concluded that lack of exercise, smoking, and consumption of a fatty diet, DM, HTN, mental distress, high BMI and previous family history of IHD are all frequently found in IHD patients of district Peshawar. Lack of exercise and smoking are especially more frequent among young adults whereas consumption of fatty diet and consequent rise in the BMI are relatively more common in the older adults.

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