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Risk factors for ischemic heart disorder patients: Outcome of a survey conducted in Dhaka city, Bangladesh

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ABSTRACT

This study was conducted to explore the risk factors of the patients of ischemic heart disorder. Data were collected by questionnaires on the basis of age, sex, body mass index, smoking and presence or absence of other diseases like lung, kidney, thyroid and peripheral vascular diseases, diabetes etc. Data of 150 patients were analyzed statistically. Males were found more vulnerable to ischemic heart disorder than females. This study also indicates that increased body weight, higher body mass index, hypertension, smoking, sedentary life style and family history of cardiac diseases are influential risk factors for ischemic heart disorder.

Key Words: Ischemic heart disorder, body mass index, physical activity, risk factors.

INTRODUCTION

Now-a-days it is comprehensible from studies that cardiovascular diseases (CVD) have become ubiquitous cause of morbidity and a leading contributor to mortality in most countries (Lopez, 1993; Murry and Lopez, 1994). Although coronary artery disease is registering a downswing in its incidence in developed countries, it is assuming near-epidemic proportions in the Indian subcontinent (Banerjee, 2001). Studies from India and Bangladesh also have revealed the upward trend in the prevalence of cardiac diseases (Hypertension Study Group, 2001). According to World Health Organization mortality country fact sheet 2006, ischemic heart disease (12%) is the foremost cause of death in Bangladesh (World Health Statistics, 2006). Various studies conducted previously have revealed that there is a multitude of risk factors of ischemic heart disease. These include: increase in hypertension, family history, dyslipidaemia, diabetes, overweight,

obesity, physical inactivity and tobacco use, amongst others (Reddy *et al.*, 2006). With growing urbanization, socio-developmental changes have taken place during last 10 years. Dramatic changes in life style from traditional to modern have lead to physical inactivity due to technological advances. Furthermore, increasing population growth at the current rate of about 1.6% in each year and technological advances have shrunken the employment opportunities particularly among young generation – leading to stress and hypertension in young persons, including students and laborers (CIA Factbook, 2011). The study aimed to identify the risk factors for ischemic heart disorder with the purpose to suggest possible interventions based on the risk factor analysis.

MATERIALS AND METHODS

Study participants were recruited from 8 cardiac hospitals located in Dhaka, capital of Bangladesh. The number of participants in the survey was 150. We collected the information from each respondent through a questionnaire based on age, sex, weight, height, dietary pattern, history of diabetes, family history of hypertension, past history of any exami-

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Table 1: Descriptive analysis of the anthropometric factors.

Variables	Mean± SD	Female		Male		Range	
		Mean	95% CI	Mean	95% CI	Minimum	Maximum
Age (years)	55.16±8.92	51.24*	42.78-48.33	57.63	48.53-53.94	39	80
Body weight (kg)	61.77±9.81	57.50 ^{NS}	47.49-53.60	64.46	54.61-60.40	40	91
Height (inches)	61.23±4.92	54.26*	51.99-54.86	63.10	56.78-59.74	48	69
BMI (kg/m ²)	25.39±3.20	26 ^{NS}	25.96-28.05	25	24.86-27.02	16	34

*P<0.01 considered significant; NS-non significant

nation of blood pressure and hypertension, or any other complications, any symptom referable to target organ dysfunction, previous and present treatment profile, and addictions. The level of physical activity was measured by subjective method (Vanhees *et al.*, 2005). After collecting data, we verified and compiled data to enter into statistical program SPSS statistical program version 12, Chicago, IL.

RESULTS AND DISCUSSION

Information of age, weight, height, history of diabetes, kidney, lung diseases, smoking, addiction, body mass index (BMI) of ischemic heart disorder patients are available from this study. Obtained data regarding continuous variables are expressed as mean (95% confidence interval [CI]) and quantitative variables as percentages (Table 1).

Data indicate that mean and 95% CI for age, body weight and height of male were greater than female whereas BMI were greater in female than male. It is also evident that ischemic heart disorder can occur at any age which range from 39-80 years. Ischemic heart disorder occurs virtually at any age, but its frequency rises progressively with increasing age and when predispositions of atherosclerosis are present. However, concerning the female subjects, ischemic heart disorder seems to be earlier as compared to the males. Study revealed that nearly 10% of myocardial infarction occurs in people under age of 40, and 45% in people under age of 65. Present study also revealed that 38.7% of patients were female and 61.3% of were male. So, male are more vulnerable to myocardial infarction than female.

Throughout the life, men are at significantly greater risk than women (Mendelsohn and Caras, 2005). This can also be attributed to the fact that males are

more affected by ischemic heart disease or the risk factors associated with ischemic heart disorder may be because this group is more prone to tobacco smoking and alcohol use, which can accentuate the risk. These confirm the statements put forward by World Health Organization (2002) which identified “physical inactivity and tobacco use”, amongst others as being contributors to risk factors of CVD. Among the surveyed patients of ischemic heart diseases 38.7% were found to possess lung disease, 54.7% diabetes, 14% thyroid disease, 16% kidney disease, 39% peripheral vascular disease and 96.7% hypertension respectively (Table 2). So, the study revealed that individuals who had previous incidence of hypertension and diabetes were more

Table 2. Percent distribution with and association by sex and risk factor.

Parameter		Female	Male	Chi Square (d.f) P-value
Diabetes	Yes	24.0%	14.67%	2.091(1)
	No	30.7%	30.7%	0.100
Kidney disease	Yes	7.3%	8.6%	0.619(1)
	No	31.33%	52.67%	0.286
Thyroid disease	Yes	11.3%	2.6%	18.411(1)
	No	27.3%	58.7%	0.000*
Lung disease	Yes	4.7%	34.0%	2.711(1)
	No	14.0%	47.3%	0.074
Hypertension	Yes	37.3%	1.3%	0.004(1)
	No	59.4%	2.0%	0.643
Peripheral vascular disease	Yes	8.0%	30.7%	0.93(1)
	No	22%	39.3%	0.035
Family history	Yes	18.7%	20.0%	0.034(1)
	No	28.7%	32.6%	0.493
Sedentary life style	Yes	26.7%	12.0%	0.147(1)
	No	40.0%	21.3%	0.420
Alcoholism	Yes	0.7%	38%	9.456(1)
	No	11.3%	50%	0.001
Smoking	Yes	3.3%	35.3%	51.431(1)
	No	42.0%	19.4%	0.000

* P<0.05 considered significant

likely to be affected by ischemic heart disorder. From several studies it is obvious that diabetes is associated with a marked increase in the risk of ischemic heart disease (Kannel and McGee, 1979). It was also evident that the majority of patients had been suffering from more than one disease concurrently. Besides these, smoking, sedentary life style and family history of cardiac diseases appeared to be as major risk factors for ischemic heart disease from this study. It was found that 61.3% patients are sedentary in life style. These patients were not habituated in regular physical activities. Regular physical activities reduce the risk of cardiovascular diseases (Marcus *et al.*, 2006).

CONCLUSION

Our present study demonstrates that increased body weight, higher body mass index, previous history of other diseases like diabetes, hypertension, family history of cardiac diseases, smoking habit and sedentary life style are the influential risk factors of ischemic heart disease.

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