"Knowledge and Practice of Hypertensive Patients Regarding Prevention of Myocardial Infarction"

Md. Abdur Rashid[1], Mohammad Refatul Islam[2], Md. Durul Hoda[3], Faruk Ahmed[4], Amir Hossain[5], Md. Badiuzzaman[6]

[1]*Assistant Professor (Cardiology), Shaheed Tajuddin Ahmed Medical College, Gazipur, Dhaka, Bangladesh*
[2]*Assistant Professor (Cardiology), Shaheed Tajuddin Ahmed Medical College, Gazipur, Dhaka, Bangladesh*
[3]*Assistant Professor (Cardiology), Shaheed Tajuddin Ahmad Medical College, Gazipur, Dhaka, Bangladesh*
[4]*Assistant Professor (Cardiology), Shaheed Tajuddin Ahmad Medical College, Gazipur, Dhaka, Bangladesh*
[5]*Assistant Professor (Cardiology), Shaheed Tajuddin Ahmad Medical College, Gazipur, Dhaka, Bangladesh*
[6]*Assistant Professor (Cardiology), Shaheed Tajuddin Ahmad Medical College, Gazipur, Dhaka, Bangladesh*

Abstract
Background: Cardiovascular Diseases (CVDs) are the number one cause of death globally. More people die annually from CVDs than from any other cause. Hypertension is one of the emerging public health problems in developing country like Bangladesh. Although, myocardial infarction is life threatening disease, it is yet preventable. Good knowledge and practice is required for prevention and control of myocardial infarction.
Objective: To assess knowledge and practice of hypertensive patients regarding prevention of myocardial infarction.
Methods: A cross-sectional Hospital based study was conducted at the Dept. of Cardiology, Shaheed Tajuddin Ahmad Medical College Hospital, Gazipur, Bangladesh from January to December 2020. One hundred four (104) hypertensive patients included in our study. Purposive sampling method was used to select calculated number of study participants. Data was collected by interview method using structured questionnaire and descriptive and inferential statistics was used to analyze the data.
Results: More than half of the participants (60.5%) had high level of knowledge of prevention of myocardial infarction whereas 39.4% had low level of knowledge. Similarly, 58.6% had good practice; however, 41.3% had poor practice. This study found significant association of knowledge with gender, education and socio-economic status. In the same manner, there was significant association of practice with ethnicity and awareness of disease.
Conclusion: Only around half of the hypertensive patients had good knowledge and practice of the prevention of myocardial infarction. Therefore, awareness level should be increased and identified factors needs to be addressed.
Keywords: Knowledge, Hypertension, Myocardial Infarction, Practice, Prevention.

I.   Introduction

Cardiovascular Diseases (CVDs) are the number one cause of death globally. More people die annually from CVDs than from any other cause. An estimated 17.5 million people died from CVDs in 2012, representing 31% of all global deaths. Of these deaths, an estimated 7.4 million were due to coronary heart disease and 6.7 million were due to stroke. Over three quarters of CVD deaths take place in low- and middle-income countries [1]. According to American Heart Association Coronary artery disease mortality rates will double from 1990 to 2020, with approximately 82% of the increase attributable to the developing world [2]. Myocardial Infarction commonly known as heart attack, occurs when blood flow stops to a part of heart causing damage to the heart muscle, risk factors include high blood pressure, smoking, diabetes, lack of exercise, obesity, poor diet, excessive alcohol intake [3]. Importantly, it is a prevailing risk factor for Myocardial Infraction (MI) in the general population [4]. CVDs are expected to be the major causes of morbidity and mortality in many developing countries of the world by 2020 [5], yet it is preventable [6]. Knowledge about prevention and control of complication especially MI is crucial. It has been reported that South Asians have a very poor degree of knowledge regarding coronary heart disease [7]. In Nepal, people have very basic ideas about MI but the detail study on this topic is still required [8]. Therefore, this study aimed to identify the level of knowledge and the practice of hypertensive patients for the prevention of myocardial infarction.

II. Materials and Methods

A cross-sectional Hospital based study was conducted at the Dept. of Cardiology, Shaheed Tajuddin Ahmad Medical College Hospital, Gazipur, Bangladesh from January to December 2020. One hundred four (104) hypertensive patients included in our study. Non-probability purposive sampling method was used to select hypertensive patients presenting in the OPD of STAMCH for the study. Previously diagnosed hypertensive patients were taken for the study which was calculated by using $z^2 pq/d^2$, assuming prevalence of knowledge and practice 50% in 95% CI and 20% allowable error. Structured questionnaire on (knowledge and practice) were used to collect data through interview method. There were total twelve questions about knowledge and thirteen questions about practice so total knowledge score was 12 and 13 for practice. Mean score of knowledge (8.29) and practice (7.94) was taken for categorization. If knowledge score obtained by the participants was above mean score then it was categorized as high level knowledge and if it was below mean score then it was graded as low level knowledge. Similarly, if the practice score was above mean then it was categorized as good practice and if it was less than mean, it was graded as poor practice. Data was analyzed in SPSS 21 version using descriptive (mean and standard deviation) and analytical (Chi square test) statistics.

III. Results

Out of total hypertensive respondents, more than half (60.5%) had high level of knowledge whereas 39.4% had low level of knowledge regarding prevention of MI (Table-1). This study revealed that knowledge among female (75.86%) than to male (43.47%). In the same manner, literate participants (69.23%) were aware about the prevention of MI compared to illiterate participants. Around three fourth (70.27%) of participants, having high level of knowledge, were from upper class and rest (36.66%) were from lower class as shown in table-2. Similarly, 58.6% had good practice and were taking the appropriate preventive measures of MI, though, 41.3% had poor practice as shown in the table-3. More than half of the respondents (65.07%) from upper caste had good practice of prevention of MI. Moreover, those participants who were involved in awareness programs of prevention of MI previously, (82.35%) had good practice of prevention of MI than the participants not involved in such programs earlier (51.72%) as presented in table-4. This study showed that the maximum numbers of respondents were overweight (50%) followed by obese (32.3%) and normal weight (17.7%) respectively. The calculated mean Body Mass Index (BMI) was 26.64 and standard deviation was 4.07. Out of the total respondents, 89 (85.5%) were at risk of cardiovascular disease according to increased waist hip ratio.

Table 1: Level of knowledge and practice (n=104)

Level of Knowledge	Frequency	Percentage %
High level (>8.29)	63	60.5
Low level (<8.29)	41	39.4
Total	104	100
Mean±SD	8.29±SD	

Table 2: Association between the socio-demographic variables and the Knowledge (n= 104)

	Variables	Grading of Knowledge		Total (%)
		High (%)	Low (%)	
Age	<50 years	24(68.57)	11931.42)	0.33
	>50 years	39(56.52)	30(43.47)	0.66
Sex	Male	20(43.47)	26(56.52)	0.43
	Female	44(75.86)	14(24.13)	0.56
Education	Literate	63(69.23)	28(30.76)	0.86
	Illiterate	0(0)	13(100)	0.13
Occupation	Employed	30(68.18)	14(31.81)	0.43
	Unemployed	34(56.66)	26(43.33)	0.57
Socio-economic class	Upper class	52(70.27)	22(29.72)	0.7
	Lower class	11(36.66)	19(63.33)	0.3
Religion	Muslim	54(61.36)	34(38.63)	0.83
	Hindu	8(72.72)	3(27.27)	0.11
	Others	1(20)	4(80)	0.05
Residential area	Urban	50(67.56)	28(35.89)	0.73

	Rural	13(50)	13(50)	0.27
Awareness	Yes	12(80)	3(20)	15
	No	51(57.30)	38(42.69)	0.84
Past history of MI	Yes	4(40)	6(60)	0.1
	No	59(62.76)	35(37.23)	0.89

Table 3: Level of practice (n=104)

Level of practice	Frequency	Percentage %
Good (>7.94)	61	58.6
Poor (<7.94)	43	41.3
Total	104	100
Mean±SD	7.94±1.35	

Table 4: Association between the socio-demographic Variables and the Practice (n=104)

	Variables	Practice		Total (%)
		Good	Poor	
Age	<50 years	23(94.11)	11(32.35)	0.33
	>50 years	37(52.85)	33(47.14)	0.67
Sex	Female	28(60.86)	18(39.13)	0.43
	Male	31(53.44)	27(46.55)	0.56
Residential area	Urban	42(55.26)	34(44.73)	0.73
	Rural	17(60.71)	11(39.28)	0.27
Education	Literate	53(59.55)	36(40.44)	0.86
	Illiterate	6(38.46)	9(61.54)	0.13
Socio-economic status	Upper class	42(57.53)	31(42.46)	0.7
	Lower class	17(54.83)	14(45.16)	0.3
Awareness	Yes	14(82.35)	3(17.64)	0.16
	No	45(51.72)	42(48.27)	0.84

IV. Discussion

Demographic patterns of 104 participants at STAMCH were age, sex, ethnicity, and religion, types of family, education, occupation and residence. This study assessed level of knowledge and practice of hypertensive patients regarding prevention of MI, where more than one quarter (34.4%) of participants were between the ages of 45-55 years. According to a recent report, 18% of the Bangladeshi population (adults>25 years old) have hypertension, yet it was more than 32% in our sample [9]. More than half (56.3%) of the hypertensive participants were male in present study which is similar with the study population of Pokhara (66.7%) [8]. About fifty (67.56%) of our study participants were living in urban area which is similar to study done in India [10]. It may be due to our study area located in the nearest District capital city of Bangladesh. Thus, this sample's disease burden was much higher than current epidemiological measures of the Bangladeshi population. This study revealed that knowledge level was higher among female (75.86%) than to male (43.47%). In the same manner, literate participants (69.23%) were more aware about the prevention of MI compared to illiterate participants. Around three fourth (70.27%) of participants, having high level of knowledge, were from upper class and rest (36.66%) were from lower class. An increased co-morbidity index as well as extensive family history may have increased one's awareness of their morbidity. This is similar to the Strong Heart Study that was conducted with Native American populations in which having more CVD risk factors were associated with higher levels of CVD knowledge and health literacy [11]. Around 86% were literate in our study which is similar to (80%) study conducted in a part of India [10]. In the same manner, more than half of participants (57.3%) were unemployed in our study which is higher than a study conducted in India (12.94%) [10]. Moreover, half of our participants were in upper middle class whereas study in a part of India showed that 24.11% were from class II socioeconomic status [12]. This might be due to different geography and

different tools used for classification of socioeconomic status. Nearly half of our participants (49%) were overweight followed by 32.3% obese based on the World health organization (WHO) classification of BMI for Asian people [13]. Whereas, 65% had BMI more than or equal to twenty-five in a similar study of India [12]. We found that 89.6% were at risk of cardiovascular disease due to increased waist hip ratio on the basis of the cutoff point of the waist-hip ratio of WHO. Moreover, this study identified around more than half (60.5%) had high knowledge and 39.4% had low knowledge about prevention of MI which is higher than study conducted in India which revealed 15.33% had good knowledge and 84.67% had poor knowledge of prevention of cardiovascular diseases [10]. This observed difference might be due to different characteristics of study participants. This study also revealed high level knowledge among female (75.86%) than male (43.47%). As this study, did not analyzed educational and other characteristics based on gender so it needs to be explored. In contrast, mean score of knowledge was little bit higher in male (13.86) than in female (13.29) in a study conducted in India [10]. Similarly, this study shows that the mean score of knowledge is 8.29 out of 12 total score, while mean score was three, range (0-11) out of 15 in a similar study done in Pakistan [7]. This shows that mean knowledge score is comparatively greater in our study. The differential result might be due to different tools used to assess knowledge in both study. On the other hand, more than half (57.3%) of the hypertensive patients had good practice and (42.7%) had poor practice of prevention of MI in our study. Study of Pakistan revealed that although three quarter of the total participants felt that the preventive practice of the Coronary Heart Disease was needed, implementation of that thought in their real life was largely lacking [7]. However, that study dealt about knowledge of modifiable risk factors rather than about prevention of MI only and the participants were already diagnosed as MI so that might have influenced the knowledge level [14]. Even so, several studies show women being more knowledgeable in the identification of CAD risk factors [15]. This finding translates appropriately to the current occurrence in Bangladesh where successful focused health interventions are often women-centered and gender-equity oriented [16]. It might be due to similar study setting as both are central level referral hospital and other socio demographics characteristics of participants might be similar in both studies, however, tools of measurements were not alike.

V. Conclusion

This survey revealed specific lapses in knowledge, attitude, and practice behaviors in regards to CVD. Women, poor, uneducated and young individuals were less proficient in knowledge about CVD. A poor understanding of diet and exercise in reducing CVD and the association of tobacco smoking with CVD mortality was demonstrated. This study showed that only around half of the participants had high level of knowledge and good practice. It also found that knowledge and practice are influenced by the gender, education, socio-economic status, ethnicity, and awareness. Thus, further awareness regarding prevention of MI needs to be provided to hypertensive patients and large scale study should be planned to identify the determinants of knowledge and practice of prevention of MI among hypertensive patients.

References:

[1]. Vaidha A. Tackling cardiovascular health and disease in Nepal: epidemiology, strategies, and implementation. Heart Asis. 3(1), 87–91 (2011).

[2]. Kearney PM, Whelton M, Reynolds K et.al. Global burden of hypertension: analysis of worldwide data. The Lancet. 2005; 365(9455):217-23

[3]. Zuhaid M, Kazmi S, Khan A et al. Knowledge of modifiable risk factors of cardiovascular diseases among patients with acute myocardial infraction. J. Ayub. Med. Coll. Abbottabad. 26(3), 364–367 (2014)

[4]. Gandhi S, Chaudhari, Bhuval R, Mallick K, Vasava B. Awareness and prevention of Myocardial Infarction and Hypertension in general population of Surat City. National Journal of Community Medicine. 2010; 1(2).139.

[5]. David S. Celermajer, Clara K. Chow et al. Cardiovascular Disease in the Developing World. Journal of the American College of Cardiology 2012; 60 (14):1207 1216.

[6]. Vaidya A, Pokharel PK, Nagesh S,et al. Prevalence of Coronary Heart Disease in the Urban Adult Males of Eastern Nepal: A population-based analytical cross-section study. Indian Heart J. 2009; 61(4):341-7.

[7]. Jafary H F, Aslam F, Mahmud H,et al .Cardiovascular health knowledge and behavior in patient attendants at four tertiary care hospitals in Pakistan- a cause for concern. BMC Public Health.2005; 5: 124. doi:10.1186/1471-2458- 5-124

[8]. Shankar PR, Partha P, Shenoy N, et al. Knowledge about heart attack and hypertension among individuals attending a cardiac camp in Pokhara city. Kathmandu University Medical Journal. 2015; 5 (2):273-278.

[9]. Alam DS, Chowdhury MA, Siddiquee AT, Ahmed S, Niessen LW. Awareness and control of hypertension in Bangladesh: follow-up of a hypertensive cohort. BMJ Open. 2014; 4(12):e004983.

[10]. Choudhary M, Sharma k, Sodhi J. Knowledge Regarding Preventive Measures of Coronary Artery Disease among Patient Attending Out Patient Departments of Selected Hospital Of Ludhiana City. International Journal of Healthcare sciences. 2014; 2(1):60-63.

[11]. Schweigman K, Eichner J, Welty TK, Zhang Y. Cardiovascular disease risk factor awareness in American Indian communities: the strong heart study. Ethnicity & disease. 2006; 16(3):647-52.

[12]. Mahajan H, Kazi Y, Sharma B, Vlhal GD. Assessment of KAP, Risk Factors and Associated Co-Morbidities in Hypertensive Patients. IOSR-JDMS. 2012; 1(2):6-1.

[13]. Organization WH. The Asia-Pacific perspective: redefining obesity and its treatment. Sydney: Health Communications Australia; 2000.

[14].   Khan S M, Jafary H F, Jafar H T, et al. Knowledge of modifiable risk factors of heart disease among patients with acute myocardial infarction in Karachi, Pakistan: a cross sectional study. BMC cardiovascular disorder.2006; 6:18.
[15].   Jensen LM, DK. Gender differences in knowledge, attitudes, and beliefs about heart disease. Nursing Clinical of North America. 2008; 43(1):77-104.
[16].   Chowdhury AM, Bhuiya A Fau - Chowdhury ME, Chowdhury Me Fau - Rasheed S, Rasheed S Fau - Hussain Z, Hussain Z Fau - Chen LC, Chen LC. The Bangladesh paradox: exceptional health achievement despite economic poverty. Lancet. 2013; 382(9906):1734-45.