

KNOWLEDGE AND PERCEPTION ABOUT THE DISEASE, AMONG PATIENTS WITH MYOCARDIAL INFARCTION

Abdul Ghaffar Khan¹, Naveed Ullah Khan², Ijaz Hussain³, Asadullah Kundi⁴,
Jabar Ali⁵

^{1,2,4}National Institute of Cardiovascular Diseases, Karachi Pakistan.

³⁻⁵ Department of Cardiology Lady Reading Hospital, Peshawar Pakistan.

Address for Correspondence:

Professor Asadullah Kundi

National Institute of Cardiovascular Diseases, Karachi

Email:asadkundi@gmail.com

Date Received: June 20, 2013

Date Revised: August 20, 2013

Date Accepted: September 19, 2013

Contribution

All the authors contributed significantly to the research that resulted in the submitted manuscript.

All authors declare no conflict of interest.

ABSTRACT

Objective: To assess knowledge of patients with first ST elevation myocardial infarction (STEMI), regarding their disease and recommended secondary prevention.

Methodology: Patients admitted with first STEMI were enrolled. Data was collected using structured questionnaire by principal investigator. Model was constructed to identify the determinants of knowledge and perception about various variables of disease.

Results: Among 405 patients 105(25.9%) patients had lack of knowledge about the nature of their disease while 53.6% were unaware of the character of Ischemic chest discomfort. Eighty six percent were not sure about resuming their daily work. About two third of the patients were unaware of the use and side effects of medications for secondary prevention. **Conclusion:** Knowledge of patients with Myocardial infarction (MI), regarding their disease and its prevention, in a public hospital, is unsatisfactory. Our findings highlight need for standard cardiac rehabilitation for post MI patients.

Conclusion: coronary artery disease, Hypertension, rheumatic heart disease and dilated cardiomyopathy are main etiological factors of ADHF. Infections, poor compliance to medications and arrhythmias are major precipitants for ADHF.

Key Words: Coronary heart disease, Secondary prevention

INTRODUCTION

Cardiovascular disease (CVD) is responsible for about 30% of all deaths worldwide each year. Surprisingly, nearly 80%¹ of these deaths occur in developing countries. CVD is responsible for over 50 percent of all deaths in Pakistani² male of working age and about 90% of all sudden deaths. Depending on gender and clinical outcome in patients who survive the acute stage of heart attack, the risk of another heart attack, sudden death, angina pectoris, and heart³ failure for both men and women is substantial. Primary and secondary prevention is the most effective and economical long term strategy to reduce the disease burden and recurrent major cardiovascular events. Despite the AHA⁴ guidelines recommendations for secondary prevention, aspirin, beta blocker, ACE inhibitor, and lipid lowering medicine are still underused in post MI patients. Situation is⁵ not much different in the developed world either. Patient's belief and perception of future cardiac risk have an important impact on adherence to recommended treatment⁶ and lifestyle adaptation. In order to improve the compliance for adherence with such programs, patient education has a⁷ key role. Counseling helps in adherence to recommended⁸ treatment plans. This study was designed to assess the knowledge of patients admitted with STEMI regarding different aspects of their disease. This will help us in planning the most appropriate preventive strategy for unprivileged population admitted in public hospitals of Pakistan.

METHODOLOGY

Four hundred and five patients with first STEMI hospitalized in three medical (cardiac) units of National institute of cardiovascular disease (NICVD) from June 2010 to December 2010, were included in the study. Diagnosis of acute MI was based on history, electrocardiogram and cardiac biochemical marker, according to AHA guideline for STEMI.⁹

The purpose of the study was explained to patients and an Informed consent was taken. Patients with history of previous hospitalization with MI and patients who did not give informed consent were excluded from the study. Data was collected from the patients using a structured questionnaire (translated in local languages Urdu, Pashto, or Sindhi) by principle investigator. Investigator collecting the data was available for assistance required for clarification of any queries related to the questionnaire, which on average took about 15-20 minutes for completion. Confidentiality and anonymity of their responses was ensured. Data was analyzed on SPSS Version 10.0 Baseline information on demographics was obtained using descriptive statistics. Means were calculated for continuous variables such as age. Percentages for categorical variables

e.g. knowledge regarding their disease, diet, smoking, exercise, drugs and its side effects, cardiac work up and follow up were computed. Patients with lack of knowledge or with wrong perception were computed in inadequate knowledge group. Chi square test was used to compare adequate and inadequate knowledge among the patients by comparing categorical variables e.g. knowledge regarding disease, diet, smoking, exercise, drugs and its side effects, cardiac work up and follow up keeping the level of significance at $p < 0.05$.

RESULTS

Total participants recruited in the study were 405. Most of the patients 332 (82.0%) were male. The mean age of the study participants was 54.19 years SD \pm 11.50 with range 28 - 86 years.

Majority of patients admitted in the government hospital were uneducated, 62.8% were either illiterate or had only primary (up to class five) education. Only 17.7% had intermediate and higher education (Table 1).

One hundred and five (25.9%) patients had lack of knowledge about the nature of their disease while 53.6% were unaware of the character of Ischemic chest discomfort. Most of patients had reasonable knowledge about their response to cardiac chest discomfort. Out of 405 patients, 181 (44.7%) had adequate knowledge of using sublingual nitrate while 199 (49.1%) had a rather exaggerated response of consulting a doctor immediately. Dietary knowledge regarding the use of white meat (chicken, and fish), vegetables and salt intake, was adequate in most of the patients (Table 2). However, most of the study participants were unaware of the beneficial effects of dry fruits or nuts. Some of them believed that they were harmful. Most of the patients (84.9%) were aware about the harmful effects of both active and passive smoking (Table 2).

Two third of the patients (63.5%) were aware of the beneficial role of regular exercise, while sixty four (15.8%) patients considered exercise to be harmful. Only about one fifth (92 patients) (22.7%) patients had correct knowledge that daily or five days per week of more than 30 minutes brisk walking should be done.

Only 58 (14.3%) patients were aware of the fact that if asymptomatic, they could resume routine physical activity and even return to work. Less than one fourth (23.5%) knew that after MI, further cardiac work up is required for their risk stratification.

Most of the study participants were found unaware of the recommended use and side effects of aspirin, beta blocker, ACE inhibitors, and statins (Table 2).

Table 1: Characteristics Of Study Participants

Variables	Participants (n=405)	
	N	%
Age (in yrs)	28-86 (Range)	
Mean (SD*)	54.19 (\pm 11.50)	
Gender		
Males	332	82.0
Females	73	18.0
Education level		
Uneducated	161	39.8
Primary	93	23.0
Matriculation	80	19.8
Intermediate	36	8.9
Graduate	27	6.7
Post graduate	8	2.0

*SD: Standard Deviation

DISCUSSION

Admitted patients are most receptive to counseling about their disease. A structured program of patient education can have an important impact on their life style modification and proper compliance with the recommended guideline for secondary prevention of coronary artery disease.

Worrying facts emerged from this study. More than half of the respondents (53.6%) were unaware of the typical features of cardiac (Ischemic) chest discomfort and about one for th (25.9%) of the respondents did not know that they are suffering from a cardiac disease, which is alarming. This may increase the delay in seeking early medical care, which would lead to worse outcomes. Although Khan MS et al¹⁰ have already reported this fact, it is contrary to the results of a western study showing appropriate knowledge of cardiac symptoms in such patients.¹¹ This deficient knowledge of patients may be due to low level of education. Therefore, we need to educate the masses about the symptoms and risk factors of heart attack. The knowledge about the immediate steps in chest discomfort suggestive of cardiac origin was adequate, as already reported.¹¹

Dietary knowledge of white meat, vegetables and salt intake in patient with CHD was adequate in most of the patients as already reported in literature.¹² It was reassuring to know that most of the participants correctly knew that smoking (active and passive) has adverse effect on CHD. This observation is¹⁰ in accordance with previously published study. This pattern of knowledge may be due to relatively more aggressive state-funded advertising campaigns as well as educational programs discouraging the use of saturated fats and tobacco.

Research consistently shows that people who frequently

eat nuts have a dramatically reduced risk of ischemic heart disease.¹³ Surprisingly most of the study participants were either unaware of the beneficial effects of dry fruits or nuts or even had wrong perception that they are harmful. This reflects traditional and potentially unhealthy beliefs.

AHA/ACC guideline for secondary prevention has emphasized the importance of regular exercise in patients with coronary and other atherosclerotic vascular disease.⁴ It is worrisome that a large proportion of admitted patients, at day of discharge, were unaware of duration and intensity of recommended exercise. Similar trend has been reported by Zerwic JJ¹⁴ in his study conducted in the US in 1997, reported that only 15% of their study subjects recognized lack of exercise as a cause of heart disease. This finding highlights a potential area of emphasis for future educational programs.

Only 23.5% of the patient were aware that further cardiac work up is required for their risk stratification. This is quite a significant number in the context of increasing national burden of cardiovascular diseases. It identifies the need for targeting illiterate (and poorly educated) individuals in Pakistan with educational programs that are tailored to their level of understanding.

The knowledge regarding medications used for secondary prevention and their side effects was very poor. More than two third of patients were unaware about the use of aspirin, beta blocker, ACE inhibitor and stat ins. More than 90% were found unaware of side effects of these medicines. It is a matter of great concern as these drugs have established role in prevention of coronary artery disease.^{4,15} Physicians must ensure that they impart education regarding these drugs to their patients, as patients usually rely on doctors for first hand information. Moreover, strategies are needed at national level to develop standard rehabilitation programs

Table 2: Comparison of Knowledge of Study Participants Regarding the Disease and Secondary Prevention (N=405)

Aspect of knowledge assessed	Correct knowledge		Incorrect knowledge		P-value
	N	%	N	%	
Knowledge about nature of disease	300	74.1	105	25.9	<0.001
Character of cardiac chest discomfort	188	46.4	217	53.6	0.04
Response to cardiac chest discomfort	380	93.8	25	6.2	<0.001
Dietary knowledge regarding White meat intake	261	64.4	144	35.6	<0.001
Dietary knowledge regarding Fish intake	267	65.9	138	34.1	<0.001
Dietary knowledge regarding Salt intake	280	69.1	125	30.9	<0.001
Dietary knowledge regarding Vegetables intake	347	85.7	58	14.3	<0.001
Dietary knowledge regarding Dry fruits and nuts	108	26.7	297	73.3	<0.001
Awareness of Smoking hazards	344	84.9	61	15.1	<0.001
Resumption of routine activities and return to work	58	14.3	347	85.7	<0.001
Importance of Regular exercise	257	63.5	148	36.5	<0.001
Duration of brisk walking	92	22.7	313	77.3	<0.001
Awareness of recommended use and side effects of aspirin	138	34.1	267	65.9	<0.001
Awareness of recommended use and side effects of beta blocker	52	12.8	353	87.2	<0.001
Awareness of recommended use and side effects of ACE inhibitor	49	12.1	356	87.9	<0.001
Awareness of recommended use and side effects of Statins	83	20.5	322	79.5	<0.001
Awareness of recommended use and side effects of sublingual nitrate	244	60.2	161	39.8	<0.001
Knowledge regarding need of further Cardiac work up for risk stratification.	95	23.5	310	76.5	<0.001

for first hand information. Moreover, strategies are needed at national level to develop standard rehabilitation programs for the patients, which will increase compliance and reduce the national CHD burden. We read a lot, we discuss a lot about the disease, among ourselves, but we are missing the target "our innocent patients" who are sent home unprepared to fight their lifelong challenge. This study has unveiled the ground reality of patient's education, in our local tertiary care government institute. It needs to be investigated whether or not a targeted in hospital intervention to educate patients can improve their knowledge. We also need to monitor the effects of such intervention on adherence to medications and life style changes. Most important aspect of this

challenge is to tailor our intervention keeping in view limited resource of the public centre, illiteracy, and poverty.

CONCLUSION

Knowledge of patients with MI, regarding their disease and its prevention, in a public hospital, is unacceptably low. Illiteracy and limited interaction with the health care providers are important factors. Our findings highlight the need for standard interactive teaching sessions as part of cardiac rehabilitation in post MI patients. Establishment of such program, in government hospitals will facilitate

implementing the recommended secondary prevention. This will help preparing the unprivileged STEMI patients to face their lifelong challenges.

REFERENCES

- Ramachandran SV, Emelia JB, Lisa MS, Ralph BD. The Burden of increasing worldwide cardiovascular disease. In: Hurst's the heart. 11th ed. New York: McGraw-Hill; 2004. p. 15-43.
- Jafar TH, Jafary FH, Jessani S, Chaturvedi N. Heart disease epidemic in Pakistan: women and men at equal risk. *Am Heart J* 2005;150:221-6.
- Skinner JS, Cooper A, Feder GS. Secondary prevention for patients following a myocardial infarction: summary of NICE guidance. *Heart* 2007;93:862-4.
- Smith SC, Allen J, Blair SN, Bonow RO, Brass LM, Fonarow GC, et al. AHA/ACC Guidelines for secondary prevention for patients with coronary and other atherosclerotic vascular disease: 2006 update. *Circulation* 2006;113:2363-72.
- EUROASPIRE I and II Group. Clinical reality of coronary prevention guidelines: a comparison of EUROASPIRE I and II in nine countries. *Lancet* 2001;357:995-1001.
- Broadbent E, Petrie KJ, Ellis CJ, Anderson J, Gamble G, Anderson D, et al. Patients with acute myocardial infarction have an inaccurate understanding of their risk of a future cardiac event. *Intern Med J* 2006;36:643-7.
- Cooper AF, Jackson G, Weinman J, Horne R. A qualitative study investigating patients' beliefs about cardiac rehabilitation. *Clin Rehabil* 2005;19:87-96.
- Ades PA, Green NM, Coello CE. Effects of exercise and cardiac rehabilitation on cardiovascular outcomes. *Cardiol Clin* 2003;21:435-48.9. Aytekin V. Update on ACC/ESC criteria for acute ST-elevation myocardial infarction. *Anadolu Kardiyol Derg* 2007;7:14-5.
- Aytekin V. Update on ACC/ESC criteria for acute ST-elevation myocardial infarction. *Anadolu Kardiyol Derg* 2007;7:14-5.
- Khan MS, Jafary FH, Jafar TH, Faruqui AM, Rasool SI, Hatcher J, et al. Knowledge of modifiable risk factors of heart disease among patients with acute myocardial infarction in Karachi, Pakistan: a cross sectional study. *BMC Cardiovasc Disord* 2006;6:18.
- Timmins F, Kaliszer M. Information needs of myocardial infarction patients. *Eur J Cardiovasc Nurs* 2003;2:57-65.
- Wallstrom P, Mattisson I, Tyden P, Berglund G, Janzon L. Dietary habits after myocardial infarction: results from a cross-sectional study. *J Intern Med* 2005;257:329-37.
- Feldman EB. The scientific evidence for a beneficial health relationship between walnuts and coronary heart disease. *J Nutr* 2002;132:1062-101.
- Zerwic JJ, King KB, Wlasowicz GS. Perceptions of patients with cardiovascular disease about the causes of coronary artery disease. *Heart Lung* 1997;26:92-8.
- Syed IA, Riaz A, Ryan A, Reilly MO. Secondary prevention for coronary artery disease: are we following the guidelines? *Ir J Med Sci* 2010;179:535-7.