Original Article

Burden of Non-Cardiac Patients Attending Cardiac OPD at Tertiary Care Hospital

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ABSTRACT

Objective: To determine the burden of non-cardiac chest pain reported at the tertiary care hospital.
Study Design: Descriptive Cross sectional study
Place and Duration of Study: This study was conducted at the Cardiac OPD of Liaquat University Hospital, Hyderabad/Jamshoro from September 2018 to November 2018 for a period of 03 months.
Materials and Methods: Non-probability (Purposive) sampling technique was applied and the data was collected on pre-tested structured questionnaire after taking written informed consent from the patients presented in cardiac OPD. Ethical approval was taken from the ethical committee of LUMHS, Jamshoro. Statistical package for Social Sciences (SPSS) version 22 was used to analyze the data.
Results: During the study data collection period a total number of a total 182 (43%) out of (n=424) presented with non-cardiac chest pain who fulfilled the inclusion criteria while the overall response rate were (n=154) 84.6% and all those were included in the present study. Among the participant majority 83(54%) were female compared to 71(46%) males. The age of patients ranges from 19 years to 70 years with the mean age of 43.4 years. Most 32% of patients belongs to age group of 39-48 years whereas only 13% belongs to 59 and above year age group. Majority, (34.5%) of participants having only primary education and 6% of them had some higher-level education. While half (51%) of them belongs to lower middle class families or having lower middle class economic status.
Conclusion: Substantial numbers of patients were suffering from Non-cardiac chest pain (NCCP) among them female patients visited more than males, whereas majority of the patients were belonging to their middle age i.e. 39 to 48 years.
Key Words: Chest pain, non-cardiac chest pain, Tertiary care hospital

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INTRODUCTION

Chest pain is a most commonly reported complaint in the hospital`s emergency departments or coronary care unites, which could be an important and main symptom of life threating conditions, such as acute coronary symptom[1]. Majority of the patients visiting the emergency department with symptoms of acute chest pain do not have a cardiac cause for their presentation[2]. There are many reasons of non-cardiac chest pain such as trauma of the chest wall or inflammation and disease of the underlying organs other than heart[3].

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The Non-cardiac chest pain is usually similar in characteristics of the cardiac chest pain but it is mainly due to the gastrointestinal or musculoskeletal problems and are non- lethal[4]. A cross-sectional study conducted in the four districts of the Sindh Province of Pakistan, revealed that there is substantial lack of essential equipment and provider knowledge to provide necessary and effective emergency care[5]. The institute of Health Metrics and Evaluation reported that ischemic heart disease, cerebrovascular disease was the leading cause of deaths in Pakistan[6]. Globally 15% of deaths are contributed to the cardiovascular problems such as, cardiac arrest and MI and the majority of these deaths are occurring in the low middle-income countries. [7-8] According to the Institute of Health Metric and Evaluation (IHME), profile of Pakistan in 2017 reported 29% rise in deaths due to IHDs whereas 20.7% rise death toll due to CVA or stroke in Pakistan[9]. In Pakistan, where very limited health care resource are available and having high burden of communicable and non-communicable diseases. There is need to determine the burden of the non-cardiac patients, visiting the emergency department and cardiac care unit (CCU) of the tertiary care hospital.

MATERIALS AND METHODS

A total 154 patients presenting with acute chest pain at OPD of Liaquat University Hospital, Hyderabad. Having no any underlying cardiac disease conformed by consultant and ECG, Troponin I Tests (normal & negative) and given the consent to be part of the study visiting cardiac OPD. During the study period September 2018 to Number 2018 of Liaquat University Hospital, Hyderabad were included. Ethical approval was taken from the ethical committee of LUMHS, Jamshoro. The data was collected on a pre-tested structured questionnaire. We have used SPSS version 16.0 software for both data entering and analysis. Frequencies and standard deviations were calculated and categorical variable were analyzed using chi-square test. P-value of ≤0.05 was taken as statistically significant.

RESULTS

A total 154 patients with non-cardiac pain (NCCP) fulfilling the inclusion criteria had given the consent and willing to participant in the study were included. Among the participants majority 83(54%) were female compared to 71(46%) males. The age of patients ranges from 19 years to 70 years with the mean age of 43.4 years, as shown in Table 1.

Information inquired from the participants about the risk factors, comorbid features and underlying conditions related to the chest pain. Majority (73%) of the male participants were smokers while (15 %) female participants having smoking habits. Majority 54% of participants reported that they sweat excessively in routine life, while 58% reported that often they feel like chocking. Most (64%) of participants were complaining of feelings hot flushes or chills, as shown in Table 2. Regarding the characteristics of their chest pain, 12% participants reported suffering from chest discomfort for more than three times during the last year. About the severity, majority (36%) of them reported that their chest pain was moderate in severity.

Table No.1: Socio-demographic and economic features of participants (n=154)

		Female 83 (54%)		Male 71 (46%)		Total	
		n	(%)	n	(%)	n	(%)
Age of participants	19-28 years	12	(14.4)	12	(17)	*24*	*(15.6)*
	29-38 years	23	(27.7)	16	(22.7)	*39*	*(25.4)*
	39-48 years	27	(32.5)	23	(32.3)	*50*	*(32.4)*
	49-58 years	11	(13.3)	10	(14)	*21*	*(13.6)*
	59 and above	10	(12)	10	(14)	*20*	*(13)*
Education of participant	No education	17	(20.5)	10	(14)	*27*	*(17.4)*
	Primary	25	(30)	28	(39.4)	*53*	*(34.3)*
	Secondary	23	(27.7)	23	(32.3)	*46*	*(30)*
	Tertiary	11	(13.3)	8	(11.3)	*19*	*(12.3)*
	Higher level	7	(8.5)	2	(3)	*9*	*(6)*
Economic status of participants	Poor	20	(24)	29	(41)	*49*	*(32)*
	Lower middle	43	(52)	36	(50.7)	*79*	*(51.3)*
	Upper middle	20	(24)	6	(8.3)	*26*	*(16.7)*

Table No.2: Participant replies of question related to risk factors of chest pain (n=154)

Variable	Female 83 (54%)		Male 71 (46%)		Total		P-value
	n*	(%)	n*	(%)	n*	(%)	
Are you a smoker?	13	(15.7)	52	(73)	65	(42)	0.00
Do you use aspirin regularly?	39	(47)	40	(56)	79	(51.3)	0.247
Do you use NSAIDs regularly?	53	(64)	50	(70.5)	103	(67)	0.388
Do you use angesid?	41	(49.4)	32	(45)	73	(47.5)	0.592
Did you have chest pain on pressure?	43	(52)	26	(36.7)	59	(38)	0.059
Do you sweat excessively?	49	(59)	35	(49)	84	(54.5)	0.226
Do you often feel like chocking?	48	(58)	41	(58)	89	(58)	0.992
Do you have hot flashes or chills?	56	(67.5)	42	(59)	98	(64)	0.285
Do you have any one in your family having heart diseases?	45	(54)	42	(59)	87	(56.5)	0.538
Do you have Diabetes Mellitus?	44	(53)	34	(48)	78	(51)	0.526
Are you suffering from depression?	46	(55.5)	40	(56)	86	(56)	0.976
In last 4 weeks, have you had sudden feeling fear or panic?	51	(61.5)	42	(59)	93	(60)	0.772
If yes, have you experienced it before?	33	(35.5)	20	(21.5)	53	(34.4)	0.160
Do you feel excessive stress in routine life?	61	(73.5)	47	(66)	108	(70)	0.324

*** All above are reply in yes**

Table No.3: Participant replies of questions related to chest pain (n=154)

Variable		Female 83(54%)		Male 71(46%)		Total	
		n	(%)	n	(%)	n	(%)
How many times have you had chest discomfort in the past 12 months?	Once in a month	21	(25.3)	19	(27)	40	(26)
	Twice in a month	18	(21.7)	25	(35)	43	(28)
	Thrice in a month	15	(18)	11	(15.5)	26	(17)
	> three times in a month	13	(15.7)	6	(8.5)	19	(12)
	Almost daily	16	(19.3)	10	(14)	26	(17)
How severe your chest pain is?	Mild	26	(31.3)	23	(32.4)	49	(32)
	Moderate	30	(36.2)	26	(36.6)	56	(36)
	Severe	27	(32.5)	22	(31)	49	(32)
At what location you feel chest pain commonly.	Epigastric region	39	(47)	27	(38)	66	(43)
	Central chest	5	(6)	9	(12.3)	14	(9)
	Right Arm	22	(26.5)	19	(27)	41	(26.6)
	Left Arm	17	(20.5)	16	(22.7)	33	(21.4)
What type of pain you feel in your chest?	Gripping	16	(19.3)	15	(21)	31	(20.1)
	Stabbing	20	(24.1)	14	(19.7)	34	(22.2)
	Heavy feeling	19	(22.6)	19	(27)	38	(24.6)
	Burning	28	(34)	23	(32.3)	51	(33.1)
How long your chest pain usually lasts?	Less than five minutes	8	(9.6)	10	(14)	18	(11.7)
	Five to Ten minutes	9	(11)	8	(11.3)	17	(11)
	Less than fifteen minutes	10	(12)	6	(8.4)	16	(10.4)
	Fifteen to thirty minutes	28	(33.7)	27	(38)	55	(35.7)
	Less than an hour	23	(27.7)	17	(24)	40	(26)
	More than an hour	5	(6)	3	(4.3)	8	(5.2)

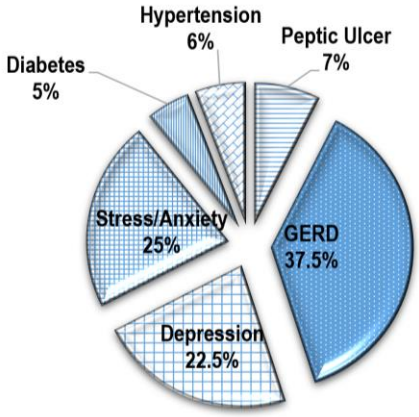

Figure No.1: Proportional distribution of patients suffering from other diseases (n=154)

Location of pain was epigastric region reported by most (43%) of the participants. Among the type of chest pain, majority (33.1%) said they feel burning like pain in chest (Table 3). Although the participants were suffering from other health problems like GERD (37.5%) followed by stress/anxiety (25%) and depression (22.2%) along with chest pain problem. (Figure 1).

DISCUSSION

Pakistan has several changes in the health care delivery system and having very less number of emergency services throughout the country. Emergency services has vital role in decreasing disabilities and mortalities.[10] there is urgent need of time to provide appropriate adequate and effective emergency medical care.[11] The major problem accompanying with increasing frequency of patients visiting the emergency or coronary care units is Non-cardiac chest pain.[12] A huge number of people spend many years of their life in a fear of fetal consequences of cardiac disorder without having any cardiac illness.[13] Awareness about diseases and healthy life style related with level of education and economic status. In the present study, majority (34%) patients were having primary education only and 51% belongs to lower middle class of families.

This study planned to assess the burden of non-cardiac chest pain among patient visiting the cardiac OPDs of Tertiary care unit. Initially patients were divided into two groups i.e. one with chest pain due to cardiac problems and presented with chest pain due other than any cardiac problem. The analysis showed that more than half (56%) of total patients visited to cardiac OPDs of tertiary care center presented with chest pain as chief complain. These findings are consistent with the similar study conducted in rural areas of Sindh by Sial et al. in 2018 reported two-third (71.6%) of their patients who visited the cardiac emergency room having chest pain as chief complain[14]. Whereas, these findings are much higher and inconsistent with the findings of studies published in Pakistan (Paichadze e al. 2015), UK (Amsterdam et al 2010) and Europe (Groarke et al. 2013 and Martínez et al. 2008).These studies demonstrated the prevalence of chest pain patients in emergency units between 2.4 and 20%[15-18]. Age of patients is an important and always crucial determinant

of non-communicable diseases like Myocardial Infarction (M.I.) and other coronary artery diseases[19]. Incidence cardiac problems, GERD, Hypertension and Diabetes etc. increases with the increasing age[19]. Such increase in incidence of diseases in working age group may lead to increase in burden on economy of family and have negative impact on personal life[20].

In this study, more females (54%) visited the cardiac OPDs with complaints of chest pain comparison with the males (46%). These findings are consistent with those by Mourad et al. 2018 reported that 51% of their participants with NCCP were females[21]. Paichadze et al. 2015 and Sial et al. 2018 reporting the less women visitors in their study i.e. 39%, 40%, 39% respectively[14-15]. In the current study, we analyzed that most (29%) patients suffered from GERD and 6% from peptic ulcer for which they recently took treatment. Similar findings regarding causes of NCCP over the years identified by researchers. Among these causes GERD is found as the most common cause followed by esophageal hypersensitivity and dysmotility, musculoskeletal pain, MDD, and pericarditis by different studies of Paichadze et al. 2015, Achem et al. 2011 and Al-Ani et al. 2015[14,22].

CONCLUSION

Substantial numbers of patients were suffering from Non-cardiac chest pain (NCCP) among them female patients visited more than males, whereas majority of the patients were belonging to their middle age i.e. 39 to 48 years. Majority of patients were in their middle age i.e. 39 to 48 years.

Author's Contribution:

Concept & Design of Study:	Jawad Qadri
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