Distribution of Myocardial Infarction Population According to Place of Residence

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Abstract

The aim was to evaluate the effect of the location of habitation on myocardial infarction incidences in various zones.Survey was executed in the Heart Center, in between July 2012 to June 2014. Survey sample includes a sum of two hundred and fifty participant patients 67.2% masculines and 32.8% feminines and age range between 22 to 86 years; with an average of 61.92 ± 15.1 years, who subjected cardiac ultrasound scanning were recorded in this potential study. Echocardiography studies were achieved using Esaote echocardiography apparatus with Phased array transducer with a frequency of 2.5 MHz. The average of the Quetelet index (QI) and the standard deviation was 28.66 ± 5.4 kg/m2 .And their habitation areas were split into 3 sets in which   52.8% of the Capital District (CD); 30.4% of Urban District (UD); and 16.8% from Rural Distric (RD). Habitation areas display considerable relationship with myocardial infarction

hazard around the earth. The spread has risen as pointed by researches in the last 10 years. Predictions for tomorrow also forecast a same tendency. The Necessity of the day is to follow up and carefully observe the spread of illness with conservation of suitable and elaborated information on hospital, society and other levels. This shall help in assessing the influence of exact calibration and strategies of fitness.

Keywords: Echocardiography, Habitation areas, Myocardial infarction.

Introduction

The quick growth of the heart muscle death, which is made up by a serious inequality between the oxygen delivery and heart muscle request is known as Myocardial infarction (MI) or heart attack. Present of any abnormality in a heart artery, leading to severe insufficiency of cardiac needs [1].

In the current century WHO supposed that MI is a familiar aspect of heart pathology,12.6% of mortality related to (CAD) (Coronary heart disease) , which is the main reason of dying in First World however it is third to HIV and inferior respiratory diseases in third world [2]. In recent years, geographic identified of societies acquired more attention in the study of diseases field [3-6].

An urban district is an area, making up of an overcrowded lived-in city center and its uncrowded found in next door, participating necessities of life [7] . An urban district includes necessary facilities. With the current modification an urban district is the core of country activities [8]. An area with more than 2,000 or fewer population was called village as the US Census Bureau identified [9]. Mortality and morbidity, reach to care, and expense of care are urban-rural variations which have been examined in several medical status, involving heart attack [10].

Materials and Methods

A potential study, cohort study was executed in the echocardiography unit of Heart Center

in, in between July 2012 to June 2014. Survey sample includes a sum of two hundred and fifty participant patients who subjected cardiac ultrasound scanning were recorded in this potential study. Full medical history, a complete physical examination and formal approval were gathered. All procedures and research aims were illustrated to participants and collected permission.

Echocardiography examination was achieved using Esaote echocardiography apparatus,with microconvex array transducer,and its frequency was (2-4 MHz). Ultrasound done in the recumbent position, the probe was put between ribs, move in various directions to get suitable images. Distinguishing movement differentiated return waves, frontal and backward motions indicated left ventricular contraction and dilatation, Respectively [11-12].

Statistical evaluation

SPSS was a program of choice to carry out data manipulation, probably examined by using calculated probability (p value).

Results and Discussion

Table 1 represents the clasfication of survey sample into masculines and feminine. Also represents their ages with statistical parameters such (average±SD). In feminine population, 35 subjects were in the age group above 70 years, representing 70.7% of the population. The age group less than 39 years were the smallest (6%) of the population [Table 2].

In the population of masculines, 58 subjects were in the age group above 70 years, representing 34.5% of the population. The age group of 50-59 years was the smallest (10%) of the population [Table 2]. The mean QI and standard deviation was 28.66±5.4 kg/m^2. Among them, 22.8 % had a QI less than 25 kg/m^2, 36% had a QI between 25 to 30 kg/m^2, 24.4% had a QI between 30 to 35 kg/m^2 and 16.8% had QI >35 kg/m^2 [Table 3].

Of the 250 participant patients under study, 41 masculine participant patients (24.4%) and 16 feminine participant patients (19.5%) had a QI less than 25 kg/m^2 ,65 masculine participant

patients (38.7%) and 25 feminine participant patients (30.5%) had (QI 25–29.9 kg/m^2), while 40 masculine participant patients (23.8%) and 21 feminine participant patients (25.6%) had (QI 30 – 34.9kg/m^2) and 22 masculine participant patients (13.1%) and 20 feminine participant patients (24.3%) had (QI $\geq$ 35kg/m^2) [Table 4].

In three habitation areas subdivisions which (n = 132; 52.8%) from Capital District (CD); (n = 76; 30.4%) from Urban District (UD); and (n = 42; 16.8%) from Rural Distric (RD) [Table 5]. Of the 250 participant patients under study, 26 participant patients (10.4%) had unknown cause, 19 masculines 7 from (CD); 9 from (UD); and 3 from (RD) & 7 feminine 2 from (CD); 2 from (UD); and 3 from (RD), also 26 (10.4%) had family medical history 15 masculines 8 from (CD); 6 from (UD); and 1 from (RD) & 11 feminine 6 from (CD); 4 from (UD); and 1from (RD). 40 patients (16%) had heart disease, 27 masculines 13 from (CD); 10 from (UD); and 4 from (RA) & 13 feminine 9 from (CD); 1 from (UD); and 3 from (RD). 46 participant patients (18.4%) had hyperglycemia, 35 masculines 22 from (CD); 8 from (UD); and 5 from (RD) & 11 feminine 6 from (CD); 2 from (UD); and 3 from (RD). 46 participant patients (18.4%) had hypertension, 28 masculines 15 from (CD); 10 from (UD); and 3 from (RD) & 18 feminine 11 from (CD); 4 from (UD); and 3 from (RD). 38 participant patients (15.2%) were overweight, 16 masculines 7 from (CD); 7 from (UD); and 2 from (RD) & 22 feminine 11 from (CD); 7 from (UD); and 4 from (RD). 28 participant patients (11.2%) were smoking, 28 masculines 15 from (CD); 6 from (UD); and 7 from (RD) [Table 6].

Everywhere, the major reason of disease prevalence ratio and death-rate in human beings is heart disease [13]. The change of population life style leads to decrease the percentage of heart disease incidence and death rate [14]. The attitude of youth made their number of the disease less than real [15].

Assessment of different types of cardiac disease performed by using Two-dimensional echocardiography.

T-Test for One Samples and Chi-Square show there is considerable various effects between Two Variables, p value (p<0.001).

Table 1: **Gender and age of the participant patients**

	Range	Average		±SD	
Age (years)	22-86	61.92		±15.1	
Sex(250)		Masculine	168		67.2%
		Feminine	82		32.8%

Table 2: **Distribution of age groups among sex**

Age	Sex		Total	Percentage (%)
	Masculine	Feminine		
≤ 39	24	5	29	11.6
40-49	24	9	33	13.2
50-59	17	10	27	10.8
60-69	45	23	68	27.2
≥70	58	35	93	37.2
Total	168	82	250	100

Table 3: **Quetelet index**

Quetelet index	Frequency	Percentage (%)	Average ± SD (years)
19 less than 25	57	22.8	21.64±1.7
25 less than 30	90	36.0	26.97±1.6
30 less than 35	61	24.4	31.98±1.4
Greater than 35	42	16.8	36.92±1.9
Total	250	100.0	28.58±5.4

Table 4: Quetelet index among participant patients' sex

Quetelet index	Sex		Total	Percentage (%)
	Masculine	Feminine		
19 less than 25	41	16	57	11.6
25 less than 30	65	25	90	13.2
30 less than 35	40	21	61	10.8
Greater than 35	22	20	42	27.2
Total	168	82	250	37.2

Table 5: Habitation of participating patients

Habitation	Frequency	Percentage (%)
Capital District	132	52.8
Urban District	76	30.4
Rural Distric	42	16.8
Total	250	100

Wall motion changes correlate to ischemia are detected by using motion modulation echocardiography [16], capability to estimate any abnormality in wall movement, alteration of left heart ventricle originated from heart artery disease, had improved by using high quality ultrasound apparatus with high facilities of heart imaging [17] [18].

Giving facts about the impact of the habitation on heart attack incidence was the The aim of this survey.

Our study revealed that the percentage of the elderly MI participant patients were more than in young MI participant patients, it comprised 188 participant patients in the old group

Table 6: **Causes of disease among participant patients' sex according to Habitation**

Cause * Habitation * Sex

cause	Habitation						Total
	Capital District		Urban District		Rural Distric		
	masculine	feminine	masculine	feminine	masculine	feminine	
unknown	7	2	9	2	3	3	**26**
Family Medical History	8	6	6	4	1	1	**26**
Heart disease	13	9	10	1	4	3	**40**
Hyperglycemia	22	6	8	2	5	3	**46**
Hypertension	15	11	10	4	3	3	**46**
Overweight	7	11	7	7	2	4	**38**
Smoking	15	0	6	0	7	0	**28**
Total	87	45	56	20	25	17	**250**

(75.2%), whereas 62 participant patients in young group (24.8%). This finding was supported by Kam *et al*. [19] who found that most of MI patients were older. On the other hand, our study revealed that QI has considerable difference. These findings were in agreement with Jousilahti et al. [20] a health hazard criterion for progress of heart disease is overweight, which is highly related with other criteria, and with Aubeidia [21] who report that the obesity spread between heart attack patients with great percentage.

In this study, we found that the percentages of overweight and obese were higher in masculine patients than feminine patients. This finding was in agreement with Kragelund *et al*., [22] in first part who reported that the incidence of overweight (QI 25–29.9 kg/m2) and obesity

(QI>30 kg/m2) were 48% and 13% in masculines and 31% and 13% in the feminine.In our study, we found that percentage of the patients from the Capital District (CD) were more than nonmetropolitan Urban District (UD) and Rural District (RD). This finding wasn't in agreement with Pandey [23] who reported that most of heart attack patients came from the village, but in agreement with Chauhan [24] who found that the occurrence ratio of CVD in urban populations was highest.

Cardiovascular diseases, diabetes, high blood pressure, high body mass index and smoking were common causes of myocardial infarction in our study. Cardiovascular diseases more common in elder in both genders, Diabetes mellitus was common in masculines. Hypertension was more common in elderly in both genders and also in young masculines. Obesity was common in elderly feminine. Smoking was common in elderly masculines.

These findings were in agreement with [25] -[26]who reported that the presence of prohibition agents, more prevalence of heart disease.Also [27] found that hypertension and hyperglycemia are more common in elderly MI patients. In 2003; [28] showed that the high disease incidence of hypertension with (ACS) found in old females. And with [29] who reported that in the prime of youth hyperglycemia played great role in heart attack morbidity and mortlity. In 1999 [30] had reported that overweight threaten all age categories of society.In contrast to our study, [31] reported that Adolescent MI patients had a higher percentage of using tobacco than older patients. Moreover. In 1995 [32] found that the actual number of daily cigarettes smoked is considerably higher in young patients as compared to older patients.The result of this study shows considerable effect of residence in ejection fraction (p<0.001).

Conclusion

This study concludes that; residence shows considerable relationship with myocardial infarction risk worldwide The spread of heart disease is threatening all segments of society. It

was also noted that there is a steady increase in these diseases, according to certain age groups and across sexes. Therefore, in order to put an end to the terrible spread in order to take the necessary measures in terms of prevention and treatment, a periodic survey must be conducted to achieve these goals.

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