

**GENDER WISE DISSIMILARITY AMONGST PATIENTS WITH ACUTE CORONARY SYNDROME AT PMCH NAWABSHAH.**

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**Abstract**

**Introduction:** There is controversy regarding the relationship between gender and acute coronary syndrome (ACS). No studies from the region have taken age into account when examining sex differences in ACS presentation and outcomes. **Objective:** To study the impact of Gender wise dissimilarity amongst Patients by means of Acute Coronary Syndrome in the PMCH Nawabshah. **Study type: Cross sectional.** **Place: PMCH Nawabshah.** **Sample size: 180 subjects.** **Duration: 01 year.** **Methodology:** From august 2019 to august 2020, 180 patients with ACS were enrolled from PMCH CCU Department, representing the general population of District SBA and associated areas. **Results:** The gender and cross tabulation association with ACS was analyzed which was statistically insignificant for male, female and total patients ie; .159, .162 and 0.602 respectively. There were 12.8% patients having USA, while 57.8 having NSTEMI and 29.4% have STEMI **Conclusion:** Although there were differences between men and women in presentation, male gender was dominant in present study as compared to females.

**Keywords:** Acute Coronary Syndrome, Gender, PMCH, Nawabshah.

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**Introduction**

The most important reason of morbidity and mortality are the cardiovascular diseases, and females have worse outcomes after acute coronary syndrome (ACS) than men.<sup>1,2</sup>

Cardio-vascular disease is the important source of mortality and morbidity universally in both men and women.<sup>3</sup> Studies indicate a gender difference in acute coronary syndrome (ACS) presentation, diagnosis, management, and outcomes. Some data suggest that women have higher mortality rates than men, while other studies have failed to show gender as a contributory factor in the presentation and mortality in ACS patients.<sup>4,5,6</sup>

There are few papers that describe the relationship between ACS and gender among Middle Eastern patients.<sup>7,8</sup> This paper aims to report on the influence of gender on ACS presentation, diagnosis, management, and outcomes in the Middle Eastern patients.

The Acute Coronary Syndromes contribute a high mortality and morbidity rates. This may lead to main deficiencies in the life style of persons and relatives<sup>9</sup>. Including Jordan and various other states round the biosphere ACS is one of the major sources of death amongst adults<sup>10,11</sup>. The occurrence of ACS amongst male gender is greater than female gender, but after menopause the frequency of ACS raises two or more times in females, that specifies the effect on both genders in diverse groups of age<sup>12</sup>.

Researches are available throughout world on demographics of ACS, but no high level focus was paid to gender differences. Few studies specially to assess the gender difference carried out.

No study was done yet in our setup. This study will help to high light the gender difference in term of frequency in our setup; will help in future for the risk assessment and management in relation to gender. It will also help in reducing the morbidity and mortality in subjects presenting with ACS.

**Objective**

To study the impact of Gender wise dissimilarity amongst Patients by means of Acute Coronary Syndrome in the PMCH Nawabshah

**Methodology**

Current study was cross sectional and was carried out at PMCH Nawabshah with sample size of 180 patients presenting with ACS at the department of cardiology. All male and female subjects with ACS were enrolled for study. Patients not willing and having the symptoms other than ACS were excluded. This study was conducted after the ethical permission. Duration: 01 year from August 2019 to July 2020. Data were collected from PMCH Nawabshah with ACS events.

The subjects with age 20 years and above from both genders with diagnosis as ACS bestowing to the ACC (American College of Cardiology) were recruited. ST-segment elevation

myocardial infarction (STEMI), non-STEMI (NSTEMI), left bundle branch blocks (LBBB) myocardial infarction, or unstable angina (UA) were the criterion. A printed well-versed agreement was obtained from all the subjects participating in the study.

**Data collection**

A standardized report form (CRF) consisting of various variables congruent thru ACC crucial statistic essentials and descriptions was used to collect data. Gathered data comprised demography of subjects, past medical history, risk elements, preceding treatments, clinical appearance, management including medicines, reperfusion rehabilitation, and procedures performed during stay at hospital, and prescriptions at discharge from hospital.

**Statistical analysis**

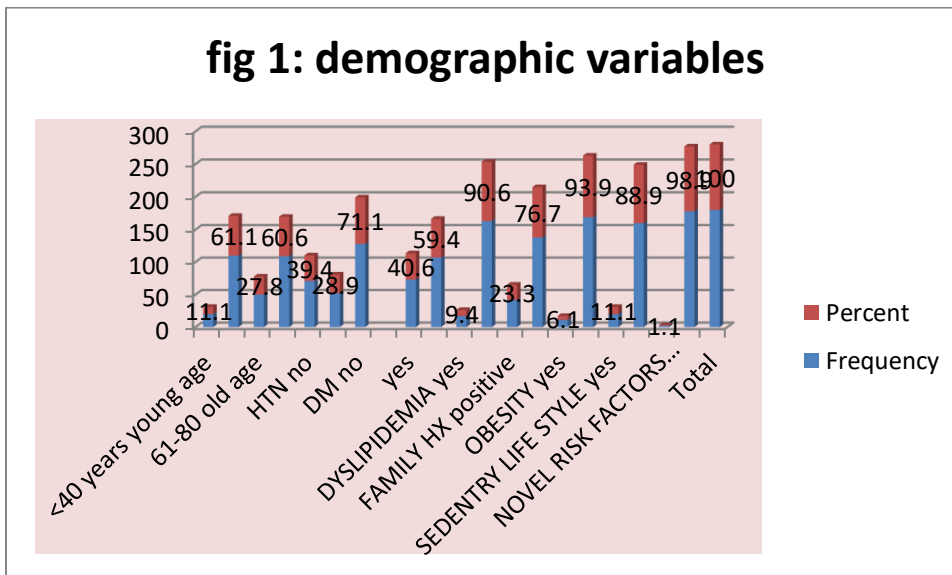
**Results:** Mean ages of subjects in years were 55.43SD±11.98, systolic BP was 131SD131.56mmhg and diastolic BP was 82SD14.15mmhg as shown in table 1.

Data was summarized for descriptive statistics. Frequency and percentage were described for categorical variables. The Pearson's Chi-square test was used for analysis of the difference between the various groups. Mean and standard deviations were applied to precise the statistics for continuous variables. Student's *t*-test was used to perform the analysis. The relationship among mortality and gender adjusting for various confounders (age, smoking, diabetes mellitus, and hypertension) was analyzed using multivariable assessment. *P* = 0.05 was a significant two-tailed level. IBM SPSS version 20.0 was used to conduct the statistical analyses.

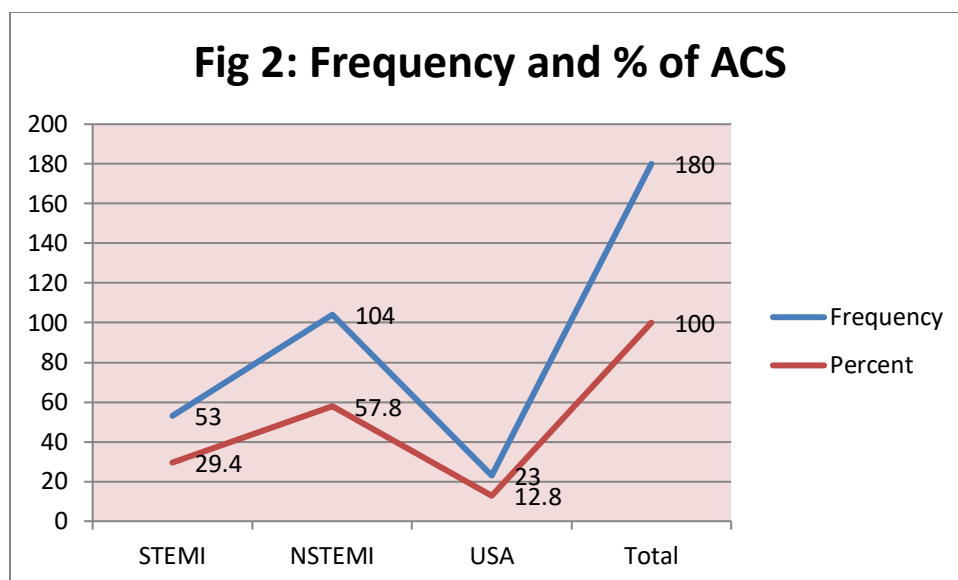
**Table 1: Descriptive Statistics**

	N	Minimum	Maximum	Mean	Std. Deviation
age in years	180	23.00	85.00	55.4389	11.98424
systolic BP	180	60.00	200.00	131.5667	28.05125
diastolic BP	180	40.00	120.00	82.8333	14.15299
Valid N (listwise)	180				

There were 11.1% subjects age <40 years, while 61.1% middle and 27.8% were belonging to old age group. HTN was present in 60.6% cases while negative in 39.4% cases. DM was present in 28.9% cases, smokers were 40.06%. Dyslipidemia was present in 23.3% cases, 6.1% were obese, 23.3% have positive family history, and 11.1% having sedentary life style and 1.1% had novel risk factors as shown in figure 1.



There were 12.8% patients having USA, while 57.8% having NSTEMI and 29.4% have STEMI as shown in figure 2.



**Table 2: gender \* ACS type Crosstabulation**

		ACS type				Total	Asymp. Sig. (2-sided)
		STEMI	NSTEMI	USA			
gender	male	Count	30	67	10	107	.159
		% of Total	16.7%	37.2%	5.6%	59.4%	
gender	female	Count	23	37	13	73	.162
		% of Total	12.8%	20.6%	7.2%	40.6%	
Total		Count	53	104	23	180	.602
		% of Total	29.4%	57.8%	12.8%	100.0%	

The gender and cross tabulation association with ACS was analyzed which was statistically insignificant for male, female and total patients ie; .159, .162 and 0.602 respectively. As shown in table 2.

**Table 3: Paired Samples Test**

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	gender - age group	-.76111	.78651	.05862	-.87679	-.64543	-12.983	179	.000
Pair 2	gender - hypertension	.01111	.66002	.04920	-.08597	.10819	.226	179	.822
Pair 3	gender - diabetes mellitus	-.30556	.68583	.05112	-.40643	-.20468	-5.977	179	.000
Pair 4	gender - smoking	-.18889	.57692	.04300	-.27374	-.10403	-4.393	179	.000
Pair 5	gender - dyslipidemia	-.50000	.54414	.04056	-.58003	-.41997	-12.328	179	.000
Pair 6	gender - family history	-.36111	.60504	.04510	-.45010	-.27212	-8.007	179	.000
Pair 7	gender - obesity	-.53333	.55330	.04124	-.61471	-.45195	-12.932	179	.000
Pair 8	gender - sedentary life style	-.48333	.52294	.03898	-.56025	-.40642	-12.400	179	.000
Pair 9	gender - novel risk factors	-.58333	.49438	.03685	-.65605	-.51062	-15.830	179	.000
Pair 10	gender - ACS type	-.42778	.78413	.05845	-.54311	-.31245	-7.319	179	.000

Paired sample test was carried out to check the paired differences of gender with other variables of study with 95% confidence interval, it had shown statistically significant association of gender with HTN, DM, smoking, family history, obesity, sedentary life style, novel risk factor and ACS.  $P < 0.000$ . As shown in table 3.

**DISCUSSION**

Cardio-vascular diseases (CVDs), a main community health problem throughout the globe, are of note worthy apprehension due to its negative impact on morbidity, mortality, and healthcare budgets. Studies focused on how cardiovascular risk is affected by health beliefs, in conjunction with sociodemographic variables.

The men and women had customary roles within the family. Male were anxious around the physical protection and preservation of the families. Female are concerned for maintenances of the families, helping in the fiscal situations, and assist family stability by postponing hospitalization. A commonly occurring cardiovascular syndrome comprising of various disorders (unstable angina, STEMI (ST-segment elevation myocardial infarction), and non-

STEMI) disturbing adults of both genders is ACS (Acute coronary syndrome)<sup>13</sup>.

Compared to men, women were older and had more co morbidities. They also had atypical presentation of ACS such as atypical chest pain and heart failure. The frequency of non-STEMI as well as unstable angina was greater among women as compared to men.<sup>12</sup>

Sex differences in the baseline characteristics, presentation, and mortality of acute myocardial infarction are well known and described repeatedly in our previous work.<sup>14, 15, 16, 12, 17</sup>

However, some studies discussed that these sex differences might be due to poor recognition of atypical symptoms by emergency physicians, which can contribute to delays in treatment<sup>18</sup>; difficulties in implementation of procedures, transfer to the catheterization laboratory, and referral-hospital acceptance; and technical challenges for women in comparison with men at PCI sites.<sup>19</sup>

The GWTG CAD (Get with the Guidelines–Coronary Artery Disease) study of a STEMI cohort showed significantly higher in hospital mortality among women within the first 24 hours of hospitalization.<sup>20</sup>

Various studies had reported on dissimilarities among both genders concerning the physiology, symptoms, and mortality with ACS<sup>21, 22, 23</sup>.

Males and females appreciate accountable for liberty. Both contribute in the conclusions regarding the affairs and future of their families. Females are men's companions in maintenances and support of family fellows. Males are concerned more about the outdoor matters and are generally accountable for providing the economical steadiness of the family. Female are concerned more in the internal concerns' off the important family concerns; such as caring of house as well as children, guaranteeing for the well taken care of husband and all other family members<sup>24</sup>. There is difference in the role of male and female from that of Europe, Australia and America (North). In these nations females commonly accept an open-minded role as companions in all facets of life. Conversely, in Jordan male are accountable for the fiscal maintenance of the family and confirming its strength and are considered as the chief bread-winners, and females are usually liable for the domestic or internal roles<sup>25</sup>. Thought is usually seen in Jordan culture, but also there are societies where in families male and female have equal roles<sup>26</sup>.

Muscle aches, shoulder pain/discomfort, and abdominal pain are the atypical symptoms of ACS, females mostly relate these issues to indigestion, aging and also to the domestic work load. This may lead to delay in the diagnosis of ACS with atypical symptoms<sup>27</sup>. Consequently these symptoms of ACS are usually misinterpreted in the female subjects. Thus delay in the diagnosis of ACS and management<sup>28</sup>. Young subjects after ACS mostly ignore the presence of cardiac pathology on the Some studies<sup>28, 29</sup> found that young patients after ACS usually do not consider the presence of any

cardiac condition based on the hypothesis that cardiac disorders are age related disorders and occurs in old age so the young adults are safe from these cardiac problems.

### Conclusions

Females were not given the proper guidelines suggested pharmacotherapies at hospital release than men across all age groups. Younger women (aged  $\leq 65$  years) had higher crude and adjusted in-hospital and 1-year mortality rates than younger men. Consequently, interventions that reduce variations in practice at the community, institutional, and regional levels are needed to improve outcomes in women with STEMI, particularly those aged  $< 65$  years.

### Recommendations

Public awareness campaigns targeting women, awareness about risk factors, early diagnosis and timely management is essential to manage this universal issue as per international guidelines available.

### Limitation:

Lake of funding resources and small size study is just refection of this area needs large randomized control trials to highlight this global issue in current setup.

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