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RISK FACTORS PROFILE AND OUTCOME OF PATIENTS PRESENTING WITH ACUTE CORONARY SYNDROME TO A PERIPHERY HOSPITAL

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Contribution

IK conceived the idea and designed the study. Manuscript was written by RU while data collection was done by ZA. MI and FF helped in review. All authors contributed equally to the submitted manuscript.

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ABSTRACT

Objective: To study various clinical and biochemical factors which are found in patients with acute myocardial infarction

Methodology: This was cross sectional study performed in DHQ hospital Timergara, Dir from1st January to 31st December, 2017. All patients presented with acute myocardial infarction were studied. Detailed history and physical examination was done to look for important risk factors and their frequency. Data was analysed using SPSS version 20.

Results: Total 331 patients were studied. Mean age was 63 ± 9 years. Males were 58.9%, ST elevation myocardial infarction (STEMI) patients were 261(78.85%), while 70 (21.14%) patients were admitted as Non ST elevation myocardial infarction (NSTEMI)., Hypertension was found in 171 (51.7%), diabetic patients were 107 (32.3 %), Hypercholestrolemia was found in 37 %, obesity in 30 %, family history of CAD in 35 %, and smoking was documented in 15 %.

Conclusion: Hypertension, diabetes mellitus, male gender, hypercholestrolemia, obesity and family history of coronary artery disease are major risk factors in patients presenting as myocardial infarction.

Key Words: ST elevation myocardial infarction non ST elevation myocardial infarction, Diabetes mellitus, Obesity, Myocardial Infarction.

INTRODUCTION

Coronary Artery Disease (CAD) is the commonest cause of morbidity and death in the current era. Inspite of so many advances in medical field but still coronary artery disease (CAD) is the commonest cause of death in the United States. According to a survey 5 million Americans are suffering from CAD.[1] Gradual rise in the prevalence of CAD is the progressive urbanization worldwide which is characterized by intake of more fatty diet in cities, less exertion and stress associated with high prevalence of hypertension, hyperglycemia, hyperlipedemia and CAD.[2,3] There is marked difference in the prevalence of CAD among different age groups, gender and ethnical differences.[4] Asians have comparatively high prevalence of CAD and it is now the most common cause of death in Asians, unfortunately the situation is even more worse in Pakistan.[5,6]

Studies show that prevalence of CAD in general population is 7.3%,.[7] A study conducted in Western population, it was found that hypertension is present in 47 % of CAD patients, other important factors found were diabetes mellitus in 12.9% of CAD patients, hyperlipidemia in 90 % and smoking was found in 24 %. Further more it was found that 66 % patients had two or more risk factors for CAD.[8] A study performed by Dodani et al, found hypertension, dyslipedemia and Diabetes mellitus were found in 38 %, 10 % and 9 %, respectively.[9]

Up till now, most of the studies on risk factors among CAD have been done on population from origin. To what extent these findings apply on the rest of population, is not sure. So evidence shows that various risk factors for CAD may be different for different populations, for example dyslipidemia may not be strongly associated with CAD in South Asians, where as hypertension is more commonly associated with CAD in Chinese.[10,11]

This is the first ever study performed in district Dir which will help to highlight the growing tendency towards CAD in this area and will define risk factors for CAD in Dir and to take preventive measures to reduce CAD burden which will be not only beneficial for public health but will also help to reduce government resources spent on this health issue.

METHODOLOGY

This study was conducted in District Head Quarters hospital Timergara which is cateogory A hospital in periphery of Khyber Pakhtunkhwa. This was descriptive cross sectional study . Data was collected from 1st January, to 31st December 2017. All patients admitted to CCU through OPD and emergency of either sex and any age as acute myocardial infarction were enrolled in the study after taking informed consent. Acute myocardial infarction was defined as typical chest pain with either ≥1 mm ST elevation in two consecutive leads (STEMI) or ECG changes of ischemia and positive troponin (NSTEMI). Hypertension was defined as history of drug treatment for hypertension or blood pressure more than 140/90 recorded at presentation. Diabetes was defined as random blood sugar more than 200 mg/dl at presentation or history of drug treatment for hypertension. Hypercholestemia was defined as cholesterol level more than 200 mg/dl. Smoking was defined as smoking 5 or more cigarettes per day for more than 6 months. Family history for CAD was defined as documented CAD in first degree relatives. Obesity was defined as BMI more than 30kg/m^2 . After thorough clinical history and examination, all patients were interviewed in detail regarding risk factors and relevant investigations were sent.

Data was analyzed in SPSS version 20. Numerical variables like age was expressed in mean ± standarad deviation. Categorical variables were described in frequency and percentages. Data was expressed in table and charts.

RESULTS

We studied 331 patients admitted to Cardiology Unit with acute myocardial infarction. Mean age of the study population was 63±9 years (28-90 years) (Table 1). ST elevation myocardial infarction (STEMI) patients were 261(78.85%), while 70 (21.14%) patients admitted as Non ST elevation myocardial infarction (NSTEMI). In STEMI patients anterior MI was more common. Anterior MI were found in 146 patients (56 %), inferior MI in 107 patients (41 %), lateral MI in 8 patients (3 %) (Figure 1). Male patients were 195 (58.9%), Hypertension was found in 171 (51.7%), diabetic patients were 107 (32.3 %). Anterior MI was the commonest type of MI found in 146 patients (44.1%). Out of total 261 patients, 176 (66.92 %) were thrombolysed and remaining were not thrombolysed. Regarding outcome 21 (6.3%) patients died during hospital stay (Table 2).

Table 1: Baseline Charactaristics of Patients with Acute Myocardial Infarction (n = 331)

No	Risk factor	Number (n)	Percentage (%)
1	Age	63 ±9 years (28-90 years)	
2	Sex (male)	195	58.9%
3	Hypertension	171	51.7%
4	Diabetes	107	32.3%
5	Hypercholestrolemia	122	37 %
6	Obesity	99	30%
7	Smoking	50	15%
8	Family history	115	35%

Figure 1: Type of Myocardial Infarction (n = 331)

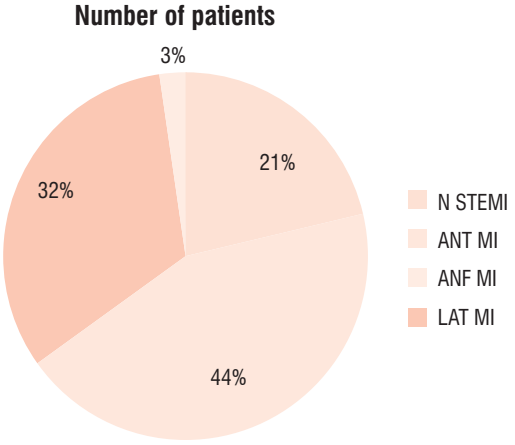

Table 2: Outcome of Myocardial Infarction (n = 331)

Outcome	Number (n)	Percentage (%)
Discharged	301	90.9%
Died	21	6.3%
Referred	9	2.7%

DISCUSSION

This study was conducted in a far flung area of KP, where there is no facility of thrombolysis in any hospital except this DHQ hospital Timergara, where most of the patients with Acute myocardial infarction either not reach this category A hospital or present very late. Patients come to this hospital emergency from whole of DIR upper, Dir lower and Bajur districts.

Our study shows that myocardial infarction is common in male than female (58.9 % vs 41.1 %). Similar findings are seen in multiple studies. Iqbal MA et al found 59 % male patients in their study.[12]

In our study hypertension is the most common risk factor found (51.7 %), similar results were found by Iqbal MA et al. in their study who found that hypertension is present in 61% study population[12]. A study conducted in Bangladesh reported 57 % frequency of hypertension in myocardial infarction.[13] Bhatcharya et al found 41 % people were having hypertension.[14]

Diabetes mellitus is also common risk factor found in patients with coronory artery disease. Diabetes was found in 32 % of our study population. Similar results were found in other studies like Iqbal MA et al showing 29.9% frequency of diabetes.[12] Other studies also found similar results like Parameshwara V showing 37.6% diabetic patients in his study[15].

Hypercholestrolemia was found in 37% of our study population. Worldwide hypercholestrolemia is one of the commonest risk factor for CAD. One study from India reported thathypercholestrolemia was present in 37.4 % of study population.[16] Other studies found lesser frequency of hypercholestrolemia in CAD like Bhattacharya et al21%, Parameshvara V 22%, Majeed et al 17 % and Seetherama N et al 20 %. Obesity was found in 30 % of our study population. Similar findings were noted in other studies like Iqbal MA et al showing 25%, and Parameshwara V showing 35.8 %.[12,14,15,18]

Some differences in our study from other studies may be due to the fact that our population characteristics may be different from other studies due to Pashtoon ethnicity, less smoking in our rural areas, more prevalent obesity and higher level of hypercholestrolemia in this area due to higher intake of meat and use of more oily foods. Also most of people are poor and can not reach proper hospitals and are mis dignosed and mis treated in villages.

LIMITATION

First our study is performed in patients admitted to CCU only. A large number of patients who either do not reach emergency, die during emergency treatment, or some patients referred to tertiary care hospital..

CONCLUSION

Hypertension, diabetes mellitus, male gender, hypercholestrolemia, obesity and family history of coronary artery disease are major risk factors in patients presenting as myocardial infarction in area which is under developed regarding health facilities

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