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AN OBSERVATIONAL STUDY ON CORRELATION BETWEEN THE MORTALITY AND TYPES OF MYOCARDIAL INFARCTION

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Keywords:
Myocardial Infarction
STEMI
NSTEMI
Mortality

Abstract

In this study we tried to determine the relation between the types of myocardial infarction and the mortality caused by them.

The study population includes 100 patients who were diagnosed with Myocardial Infraction. Among these patients (100) males are 71% and females were 28%. The males were affected more in number when compared to females. The age group of the patients was 20-90 years of age. The statistical method used is the P Value correlation. Among our total study population, the prevalence of STEMI is higher than NSTEMI. Hypertension and Diabetes mellitus is most common morbidity observed in our study population. The profoundly observed symptoms among study population that were observed are chest pain, SOB, vomiting, nausea, giddiness, loss of conscious, sweating, fever and cough.

Introduction

The term Myocardial Infarction should be used when there is acute Myocardial Injury with clinical evidence of acute Myocardial Ischemia and with detection of a rise and/or fall of cTn values with at least one value above the 99th percentile of URL (Upper Reference Limit) and at least one of the following: • Symptoms of Myocardial Infarction • New ischemic ECG changes • Development of pathological Q waves • Imaging evidence of new loss of viable myocardium or new regional wall motion abnormality in a pattern consistent with an ischemic etiology • Identification of a coronary thrombus by angiography or autopsy

MYOCARDIAL INJURY:

The term Myocardial injury should be used when there is evidence of elevated cardiac troponin values(cTn) with at least one value above the 99th percentile Upper Reference Limit (URL). The Myocardial Injury is considered acute if there is a rise and/or fall of cTn values [1] .

According to ECG there are two types of Myocardial Infarction (MI). They are

1. ST-Elevation Myocardial Infarction (STEMI)\
2. Non-ST-Elevation Myocardial Infarction (NSTEMI)

1. ST-Elevation Myocardial Infarction (STEMI) is a type of heart attack. characterised by myocardial ischemia symptoms and a prolonged ECG pattern. At least two ST-Elevation ECG leads, followed by the release of Myocardial Necrosis biomarkers. In STEMI full thickness damage (myocardial cell death) of myocardial muscle can be seen. An ST-Elevation A form of heart attack known as myocardial infarction that mainly affects hearts lower chambers [2].

2. NSTEMI: A Myocardial infarction without ST-Elevation occurs when a portion of your heart does not receive enough oxygen. It gets its name from the lack of a readily recognised electrical pattern (ST elevation) like the others. STEMI. In NSTEMI partial thickness damage of cardiac muscle is seen [3].

Based on the location of Infarct the STEMI is again divided into several types. They are:

1. Anterior MI: This type of MI involves Infarct in LAD supplies blood to the front section of the heart and a section of ventricular septum. (Anterior Descending Artery on the Left).

2. Septal MI: This type of MI involves Infarct in the anterior section of the heart and a portion of the ventricular septum to which LAD septal branches provide blood (Left Anterior Descending Artery).

3. Lateral MI: This type of MI involves Infarct in lateral side of the left ventricle to which blood is supplied by the LCX (Left Circumflex Artery) and the MO artery.

4. Inferior MI: This type of MI involves Infarct in the part of the head muscle which lies on the diaphragm to which blood is supplied through the coronary artery to the right (RCA) is blocked in 80% of individuals and 20% of the time. patients it is supplied through RCX artery.

5. Posterior MI: This type of MI involves Infarct in the posterior wall of the heart to which the blood is supplied by RCA

6. Right Ventricle MI: This type of MI involves Infarct in the right ventricle of the heart and it is seen after proximal occlusion of the RCA.

7. Atrial MI: This type of MI involves Infarct in the Atria of the heart to which blood is supplied through RCA [4].

EPIDEMOLOGY:

Each year about 220000 Americans die due to Myocardial Infarction [5]. In south east Asia Acute Myocardial Infarction (AMI) occurs in roughly 89 percent of Indians [6] due to aberrant dyslipidemia, smoking, HTN, DM, abdominal obesity, psychological variables, low fruit and vegetable consumption, and lack of physical activity. In the United States more than 7.6 million people have survived MI [5]. The average length of hospital stay for MI in the year 1999 was 4.3 days [5] but it decreased to 3.3 days in the year 2006[7]. In patients with diabetes, hospital fatality rates are around 4.6 percent in STEMI and in the case of patients with NSTEMI the in-hospital death rates are 2.2%[8]. The mortality rate Among elderly patients who were eligible for but did not get reperfusion therapy is 19 percent and the mortality rates in patients who were given reperfusion therapy is 10.5 percent [9]. Women who were eligible for reperfusion therapy but did not receive have an 18% death rate, whereas women who underwent reperfusion therapy have a 9.3% mortality rate [9]. 23 percent of women and 18 percent of men die in the first year after a MI primarily from recurrent infarction. STEMI and NSTEMI had similar rates of mortality and reinfarction after a year. In-hospital heart failure (HF) has decreased from 13% to 6.1 percent in patients with STEMI since 1999, and in-hospital death rates of patients who acquire heart failure is three times more common than individuals who do not develop heart failure [8].

ETIOLOGY:

The main reason for Acute Coronary Syndrome (ACS) and Coronary Artery Disease (CAD) are **Atherosclerotic plaques**. The other reasons are: Thrombus or embolus, Embolus from any other risk, Vasospasm, Hemorrhage or anemia, Increased demand of heart-cardiac hypertrophy, Diminished volume due to shock, Diminished oxygenation, Diminished oxygen carrying capacity [10]

CLINICAL PRESENTATION: • Midline anterior chest discomfort • Angina becomes severe and lasts for 20 mins or more • Discomfort in vein which may radiate to shoulder, left arm, back, jaw/neck • Diaphoresis • Dyspnoea • Unexplained excessive fatigue • Indigestion • Weakness • Nausea • Vomiting • Light headedness • Palpitation • Anxiety • Sleeplessness • Hypertension may lead to angina caused due to increased catecholamine levels due to anxiety/sympathetic stimulation • Hypotension indicates ventricular/valvular dysfunction • Pulmonary oedema/signs of heart failure • Jugular vein distension(JVD) • Pulmonary valves (clicking or bubbling sounds in lungs) suggest LVD or MR • Alterations in mental status confusion • Arrhythmia • Arm back or jaw pain • Shortness of breath(SOB) • Cool clammy skin and profuse sweating in case of cardiogenic shock • Decreased exercise tolerance[11]

RISK FACTORS: There are two types of risk factors. They are modifiable risk factors and non-modifiable risk factors.

Modifiable risk factors include comorbidities such as hypertension, diabetes mellitus, obesity. Non-modifiable risk factors include Age, Gender, Ethnicity, Family history, Genetics [12]

DIAGNOSIS:

1) Troponin I or T and CK-MB are measured[13] 2) Blood chemistry tests particularly potassium and magnesium which may affect heart rhythm 3) Glucose which when elevated places patient at high risk of morbidity and mortality 4) Serum creatinine level is measured to identify patients who may need dosing adjustments and patients at high risk of mortality and morbidity 5) Complete blood count (CBC) 6) Coagulation tests such as activated partial thromboplastin time(aPTT) and international normalised ratio (INR) should be calculated because patients may receive antithrombotic therapy which increases risk of bleeding. 7) Fasting lipid panel 8) Appearance of LBBB 9) Chest discomfort 10) Regional wall abnormality 11) Development of pathological Q wave 12) Increased Cardiac enzymes such as i) CK ii) AST iii) LDH 13) Echocardiogram for measurement of left ventricular function to identify patients with low ejection fraction (< 40%) as they are at risk of mortality 14) Stress testing [14]

Pharmacological Management:

Acute myocardial infarction in the early stages:

Treatment in general: Aspirin should be given as soon as possible. Morphine (4-8 mg) IV by slow intravenous push followed by 2-8 mg every 5-15 minutes provides analgesic action with hemodynamic action that helps reduce myocardial oxygen demand and has a venodilator action that lowers ventricular preload and heart rate, as well as a mild arterial vasodilator action that lowers afterload and decreases sympathetic outflow [15]

Management principles:

1. Reduce pain-to-needle time and seek immediate hospitalisation. Morphine is used to relieve pain. 2. Aspirin if you're suspicious. Continue taking 75 mg of clopidogrel per day (class 1A) for at least 14 days 3. Anticoagulation: 48 hours minimum, preferable up to 8 days; if more than 48 hours, avoid UFH. 4. Pain duration if >3 hours immediate transfer to PCCI, if < 2-3 hours or if delay to balloon inflation is more than 90 minutes urgent thrombolysis with anticoagulation by UFH or LMWH or bivalirudin 5. Acute angioplasty and stenting in chosen patients at centres with a track record of success. 6. If discomfort persists, check your blood pressure and consider intravenous nitrates or beta blockers. Add diltiazem or ranolazine to the mix. If the patient is a potential candidate for PCI, an urgent angiography and IABP are required.. 7. Consider early beta blockade and ACE inhibition as options. Diabetes necessitates ACE inhibitors or ARBs. 8. Complication management: a. LVF: nitrates, ACE inhibitors, or ARBs should be used aggressively; b. Symptomatic ventricular arrhythmias: Lidocaine; if refractory, amiodarone; c. Acute Angioplasty, IABP, and Bypass Surgery for Cardiogenic Shock d. Rupture of the free wall, mitral valve, or ventricular septum rupture, cardiac surgery is required. f. Hyperglycaemia: Use insulin whether or not the patient is diabetic. g. ACE inhibitors or ARBs should be seriously considered by all diabetics.

Table 1.4 PRINCIPLES OF MANAGEMENT FOR EARLY PHASE MYOCARDIAL INFARCTION[17]

Brady-arrhythmias: Atropine (0.3-0.5 mg) IV aliquots to a maximum of 2 mg has a vagolytic effect and can be used to treat AV block, sinus or nodal bradycardia with hypotension, and ventricular ectopy caused by bradycardia [18].

Sinus Tachycardia: Early sympathetic overactivity causes MVO2 to rise, and sinus tachycardia is a common sign. The initial step in treating this disease is to address the underlying causes, which include discomfort, anxiety, hypovolemia, and pump failure after treating the underlying cause use Beta blockers which is safe and effective management of sinus tachycardia and should be given when the patient doesn't have contraindications and is carefully monitored [19].

Acute Hypertension: In patients with thrombolytic therapy hypertension must be monitored properly because increase in the blood pressure levels increase the risk of bleeding and the Blood pressure should be Reduced to 130/80 mm Hg and thus short acting Beta blockers along with IV nitrates are given and in case of persistent hypertension and large infarcts and LV dysfunction ACE inhibitors must be given. Patients intolerant to ACE inhibitors must be provided with ARBs [20].

ACUTE REPERFUSION FOR AMI:

The reperfusion should be best done within the first 3 hours. PCI is the best option in this case because it helps open the arteries and provide a mechanical support to relieve MI. In 60% of the patients PCCI is the best approach only if It is possible to do it at any time of day or night., seven days a week [21].

Mechanical Revascularization in AMI: Although the use of fibrinolytics within the first 2-3 hours is a success there are certain limitations for the thrombolytics to achieve optimal reperfusion and thus mechanical revascularization using PCCI with angioplasty and stents is considered. PCCI is the recommended form of reperfusion therapy because it allows patients to wait less than 90 minutes between balloon inflation and lytic medication administration, reducing mortality. Stents reduce restenosis and reocclusion following balloon angioplasty, but not mortality [22].

REPERFUSION FOR STEMI IN COMMUNITY HOSPITALS BASED ON SYMPTOMS DURATION

Thrombolytic therapy:

Fibrinolytic treatment is administered to the majority of AMI patients. Activator of tissue plasminogen (tPa, alteplase) was once recommended compared to streptokinase, although there was a danger of cerebral haemorrhage with these medications, especially in women over 75 years old. Nowadays, a single bolus of thrombolytic agent Tenecteplase is routinely utilised. TNK is administered over a 5-second period as a single bolus and is weight adjusted. Reteplase is a fibrin-specific drug that is given in two ten-unit boluses 30 minutes apart [23].

GpIIb/IIIa inhibitors;

Administration of Drugs such as abciximab or tirofiban in patients receiving UFH exhibited a 28 percent reduction in mortality when compared to placebo in T_1M_1. Bivalirudin isn't recommended. Prior to PCCI, bivalirudin with GpIIb/IIIa was just as effective as heparin plus GpIIb/IIIa, but no substantial non-CABG related bleeding was reduced [24].

Aspirin and clopidogrel: Aspirin and clopidogrel are required for all AMI patients. The starting dose should be 160-325 mg, with 75-162 mg per day as a maintenance dose Clopidogrel is started at 300 mg and then reduced to 75 mg each day for 14 days. Patients over the age of 18 should not be given a loading dose 75. Clopidogrel should be used as a 600 mg loading dose[25].

Prasugrel and ticagrelor: In diabetes patients prasugrel 60 mg is given instead of clopidogrel. The role of ticagrelor is yet to be determined [26]

Heparin: UFH along with tPA, TNK to avoid future thrombin synthesis and limit the danger of reocclusion, it should be taken in the first 24 to 48 hours. The dose should be modified based on the aPTT in order to keep it between 60 and 80 seconds. Heparin therapy should be administered for at least 48 hours [27].

Low molecular weight Enoxaparin is the most often used heparin. Enoxaparin dose adjusted fibrinolytic treatment for AMI is given for 8 days. Enoxaparin doses are lowered for people over 75 years old and those with renal impairment.

Direct Thrombin and factor Xa inhibitors: Fondaparinux and Bivalirudin are direct thrombin and factor Xa inhibitors that reduce less bleeding than Heparin. Fondaparinux has been thoroughly examined for fibrinolytic treatment, while bivalirudin has been thoroughly evaluated for early invasive PCI. In PCI, bivalirudin is particularly useful in cases of bleeding. Fondaparinux is superior than UFH for thrombolytic or no reperfusion treatment for STEMI [28].

Beta blockers: Beta blockers are used to treat tachyarrhythmias such as AF, hypertension, tachycardia, heart failure and recurrent ischemia. During reperfusion use of beta blockers may help in decreasing mortality. In NSTEMI there is no evidence of trials using beta blockers. Metoprolol 5 mg slow IV, Propranolol 0.5-1 mg, Atenolol 5 mg IV bolus are the examples [29].

ACE Inhibitors or ARBs in MI: Oral ACE inhibitors or ARBs are prescribed for conditions such as hypertension, diabetes, chronic renal disease, LV failure, or an LV ejection fraction less than 40%. If the patient is intolerant to ACE inhibitors, ARBs are the treatment of choice [30]

Arrhythmias in AMI:

Treatment of ventricular arrhythmia in AMI: VF and VT are linked to higher mortality with high death rate. Lidocaine is the preferred drug for prophylactic treatment of ventricular arrhythmia. The chosen intravenous antiarrhythmic is amiodarone drug if lidocaine fails in life threatening VTs.

AMI-related supraventricular tachyarrhythmias:

- Atrial flutter, also known as AF, or paroxysmal supraventricular tachycardia are recurrent and troublesome.
- Intravenous amiodarone is used to treat recurrent AF. If there is a hemodynamic problem ultra short acting Beta Blocker esmolol is the choice of drug.
- In case of HF intravenous digoxin is the choice of drug.
- In supraventricular tachycardia, class IC antiarrhythmic medications should be avoided.
- Carotid sinus massage, vagal manoeuvres, and IV adenosine are performed first, and if that fails, IV metoprolol and amiodarone are utilised.
- IV diltiazem or verapamil in the absence of LV failure are preferred. Supraventricular tachycardia IV diltiazem is given.
- In LV failure IV adenosine or Esmolol is given.
- For AF or Atrial flutter adenosine should not be used [31]

Load reducing agents: Intravenous nitroglycerin is the appropriate drug for reducing preload during early infarction at which point ischemia may lead to LV dysfunction.

- In pulmonary edema diuretics with excess preload reduction must be avoided.
- Furosemide may cause vasoconstriction sometimes [32].

Nitrates in AMI: Nitrate medication is indicated in Mitral regurgitation in CHF patients who have continuing angina, ischaemia, hypertension, and load reduction. Patients with blood pressure less than 90 mmHg, right ventricular infarction, or who have taken sildenafil in the previous 24 hours should be administered with nitrates.

THERAPEUTIC MANAGEMENT OF NSTEMI:

ASPIRIN AND CLOPIDOGREL:

The efficacy of combining aspirin with heparin is well established. Aspirin should be taken immediately and for the rest of your life. Clopidogrel is recommended for people who cannot take aspirin. Furthermore, regardless of whether catheterization and PCI are planned, there is now solid evidence for combining aspirin and clopidogrel on admission.

Clopidogrel: For at least 7 days, 75 mg should be added daily (class 1A in the guidelines)..

Ticagrelor: In 180 mg loading and 90 mg for all individuals at moderate to high risk of ischemic events BID should be used, and clopidogrel should be stopped.

Prasugrel: This medicine is prescribed based on the Patients who undergo PCI are at risk of bleeding immediately

Fondaparinux: If this medicine is administered and the patient needs PCI a single bolus of unfractionated heparin (UFH), with the dose variable depending on whether the patient is also taking an IIb/IIIa inhibitor.

Cangrelor: It works by blocking the P2Y12 receptor. It has a faster onset of action and a shorter half-life than clopidogrel, but it is not superior to it.

HEPARIN VERSUS LMWH:

The amount of UFH has not been defined, but the most appropriate dosage is a weight-adjusted regimen with frequent monitoring to keep the aPTT between 1.5 and 2 times regulated.

Direct Thrombin and factor Xa inhibitor:

Bivalirudin is an anti-thrombin inhibitor that is used to treat NSTEMI Fondaparinux is a synthetic Penta saccharide that inhibits activated factor X indirectly (Xa) in the absence of thrombin inhibition. The anti-Xa activity is seven times that of LMWH. In STEMI, fondaparinux is not better than UFH, although it is better than LMWH in NSTEMI.

GpIIb/IIIa receptor antagonists: These medications are used in combination with aspirin, clopidogrel, and heparin (UFH/LMWH) to help patients with NSTEMI. In addition to aspirin and an anticoagulant, high-risk patients who require PCI should be given clopidogrel and GpIIb/IIIa Inhibitors. The most commonly utilised agents are eptifibatide and tirofiban.

Nitro glycerin: The conventional treatment for ACS is intravenous nitro glycerin

Beta blockers: Beta blockers can be used if there are no contraindications and are the conventional treatment, and they should be started as soon as possible. Intravenous-Beta blockers are given to higher-risk individuals or those with persistent rest pain, followed by oral administration. Ultra-short acting esmolol should be given to hemodynamically unstable patients.

CCBs: When Beta blockers aren't an option, CCBs like diltiazem or verapamil are used instead. When compared to nitrates, diltiazem has a better effect in NSTEMI.

ACE inhibitors: In the absence of hypotension or other contraindications, it should be given orally within 24 hours to people with pulmonary congestion or a left ventricular ejection fraction of 40%. Nicorandil and Ranolazine are two options[39].

Materials and methods

STUDY PROTOCOL:

- It is a prospective observational study to be performed for a duration of six months.
- Patient satisfying the study criteria are included in the study
- The relevant information was collected from the patients and their informants (primary care giver) using questionnaires.
- The data obtained shall be analysed to know the type of MI and mortality

STUDY DESIGN:

- It is a prospective observational study.

STUDY SITE:

- The study is to be conducted at CARDIOLOGY DEPARTMENT in Gandhi hospital, Secunderabad.

STUDY PERIOD:

- The study is to be performed for a duration of 180 days.

STUDY POPULATION:

- 100 Members will be included in this study.
- 31 patients are died due to MI and 69 patients are recovered.

STUDY CRITERIA:

- Inclusion criteria:
  - All genders .
  - Age: subject is a male or female between the age 21 and 85.
  - Subject has experienced a first myocardial infarction.
- Exclusion criteria:
  - Pregnant and lactating women.
  - Subject has decompensated heart failure.
  - Subject is currently using mechanical ventilation.

Results and discussion

RESULTS

A sample size of 100 subjects with MI were screened according to our inclusion criteria.

AGE DISTRIBUTION

AGE	MALE	FE MALE
21-30	0	1
31-40	7	0
41-50	21	5
51-60	20	5
61-70	13	14
71-80	8	3
81-90	2	1

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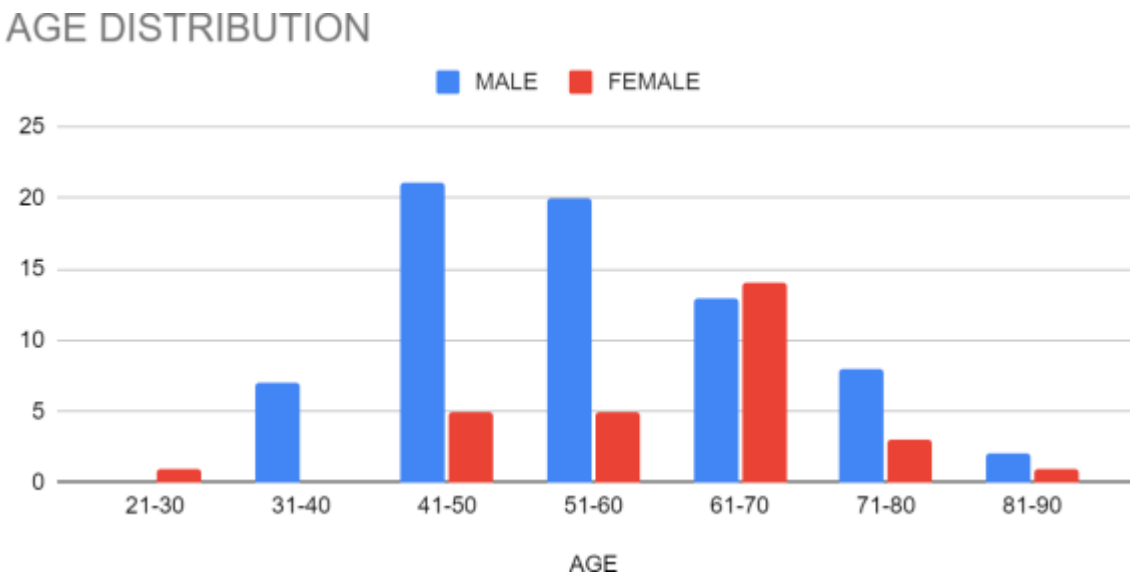

GENDER DISTRIBUTION

GENDER	NO OF PATIENTS
MALE	71
FEMALE	28

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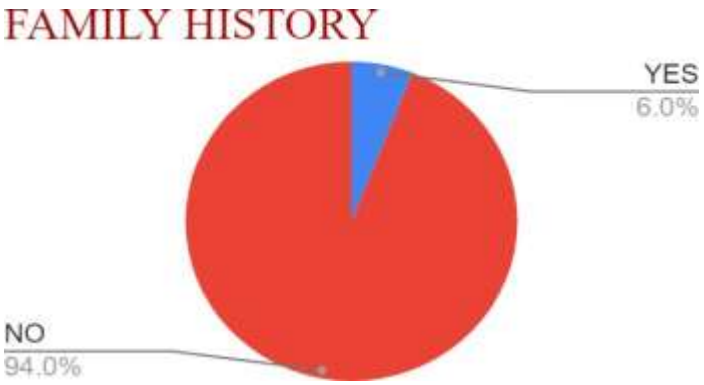
FAMILY HISTORY:

	NO OF PATIENTS	%
YES	6	6%
NO	94	94%



SOCIAL HISTORY:

CATEGORY	NO OF PATIENTS
SMOKING	7
ALCOHOL	11
BOTH	35
OTHERS	7

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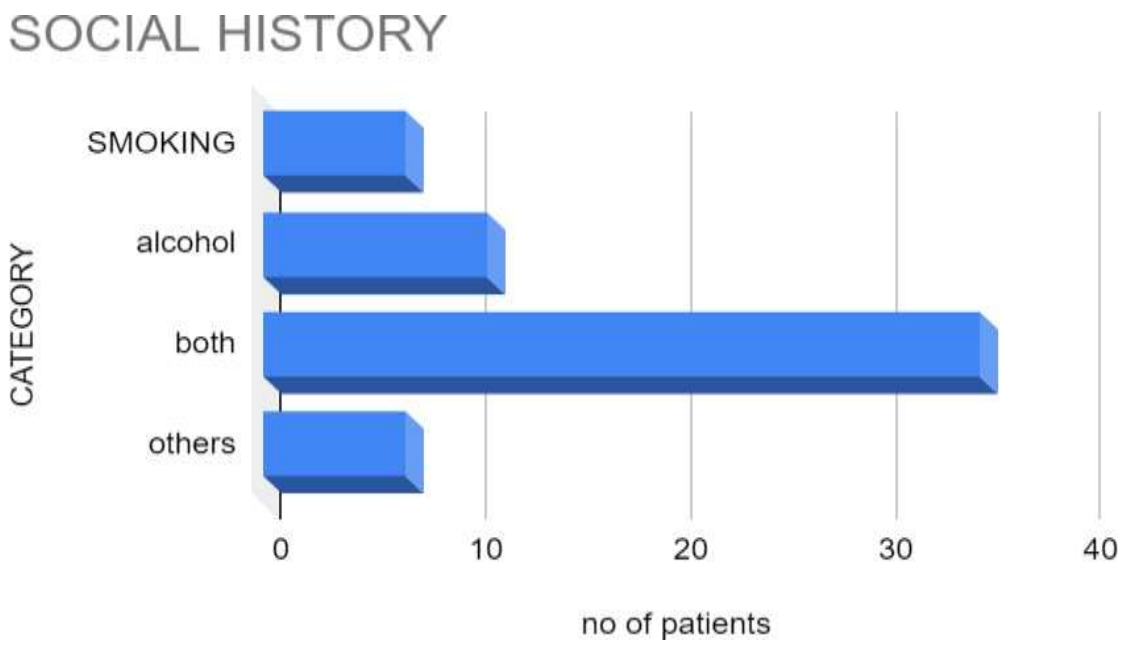
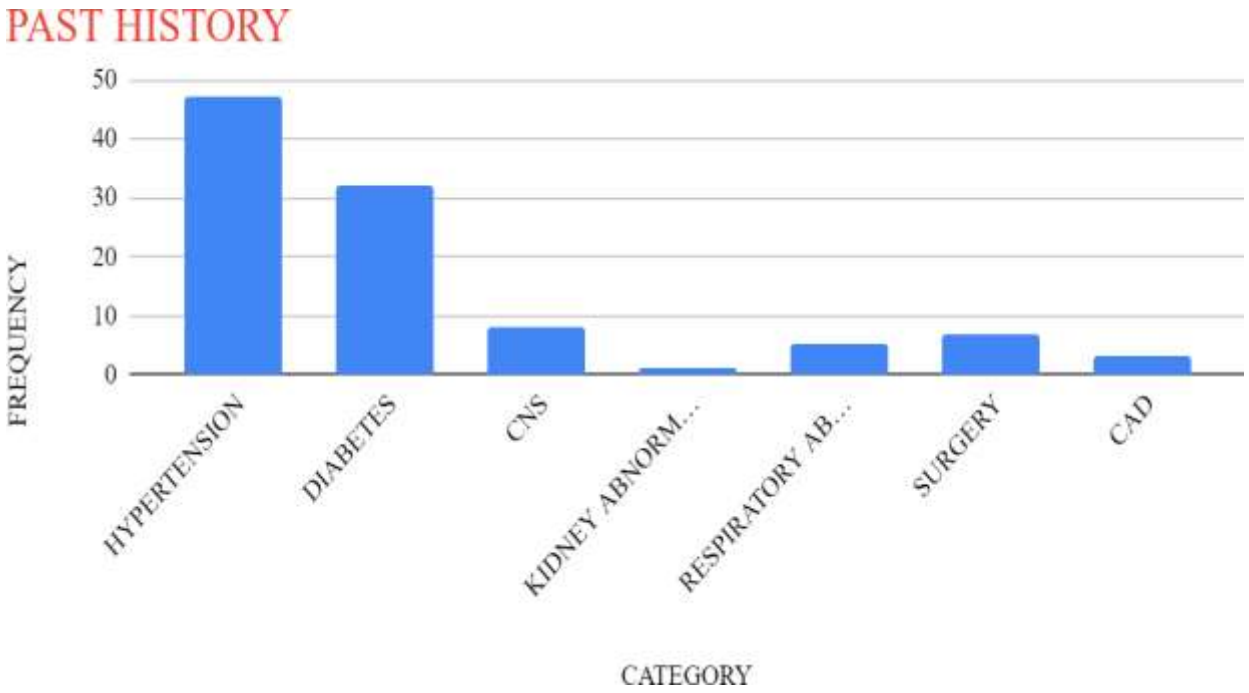
SOCIAL HISTORY:



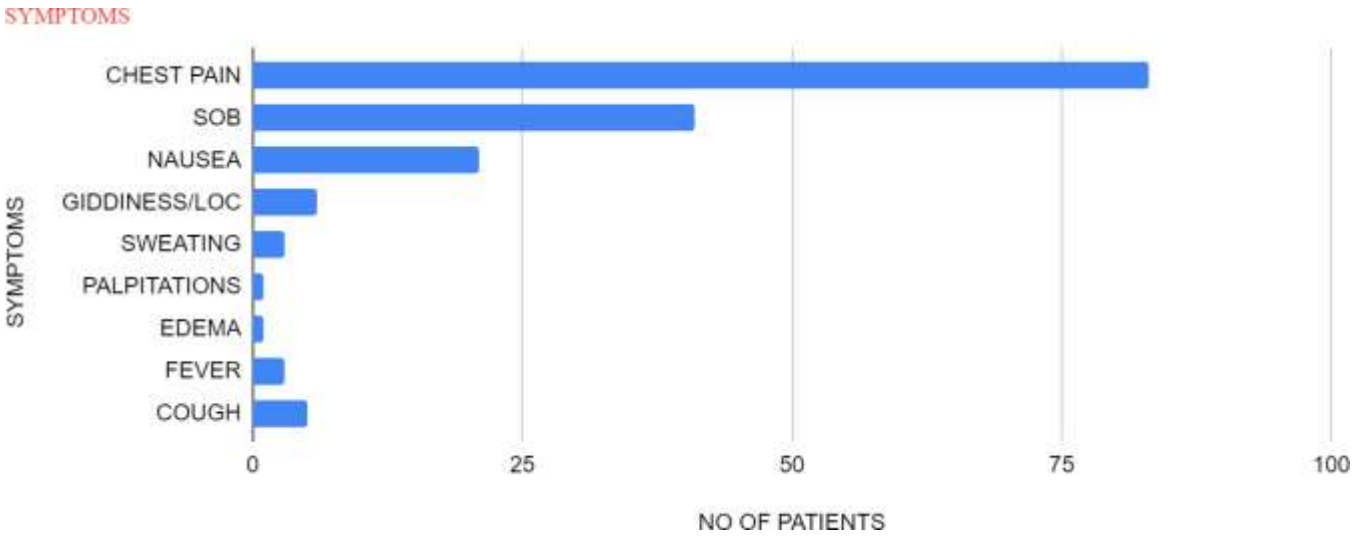
PAST HISTORY

CATEGORY	FREQUENCY
HYPERTENSION	47
DIABETES	32
CNS	8
KIDNEY ABNORMALITIES	1
RESPIRATORY ABNORMALITIES	5
SURGERY	7
CAD	3



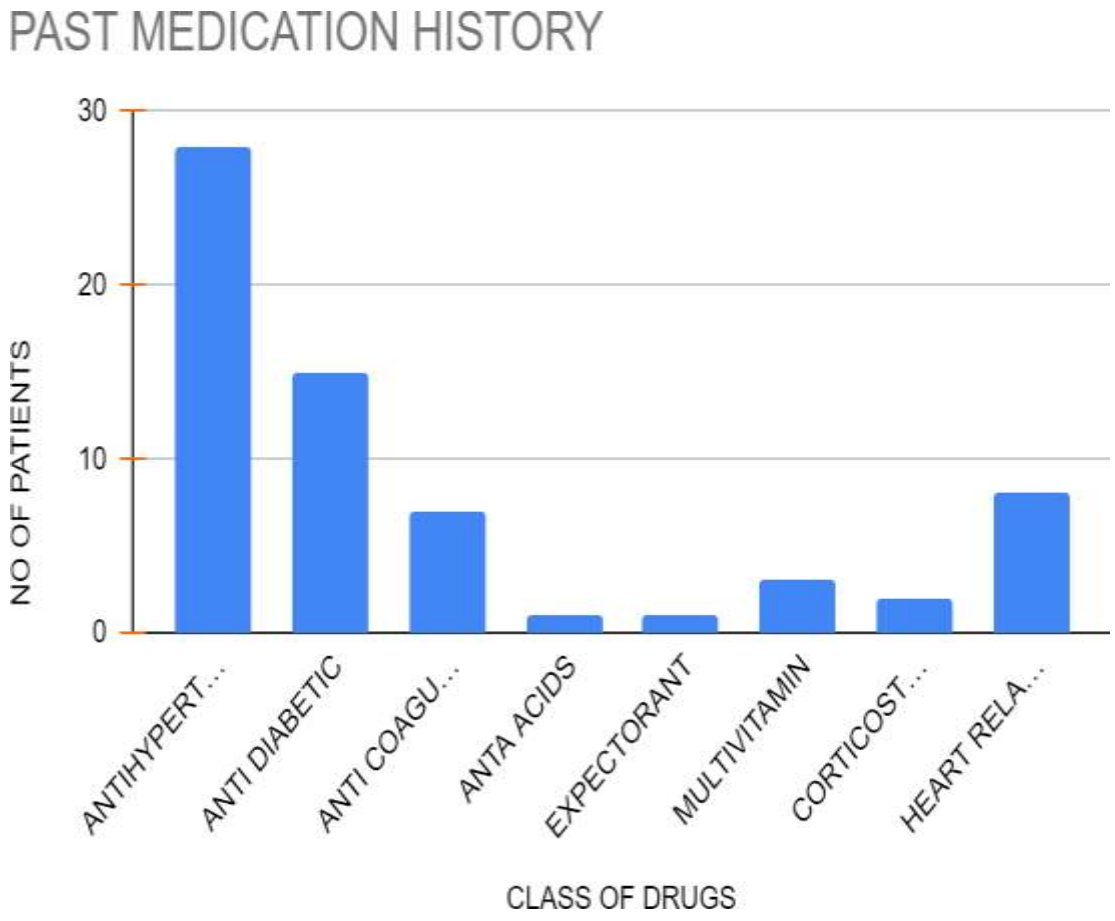
SYMPTOMS:

SYMPTOMS	NO OF PATIENTS
CHEST PAIN	83
SOB	41
NAUSEA	21
GIDDINESS/LOC	6
SWEATING	3
PALPITATIONS	1
EDEMA	1
FEVER	3
6COUGH	5



PAST MEDICATION HISTORY

CLASS OF DRUGS	NO OF PATIENTS
ANTIHYPERTENSIVE	28
ANTI DIABETIC	15
ANTI COAGULANT	7
ANTA ACIDS	1
EXPECTORANT	1
MULTIVITAMIN	3
CORTICOSTEROIDS	2
HEART RELATED MEDICATIONS	8

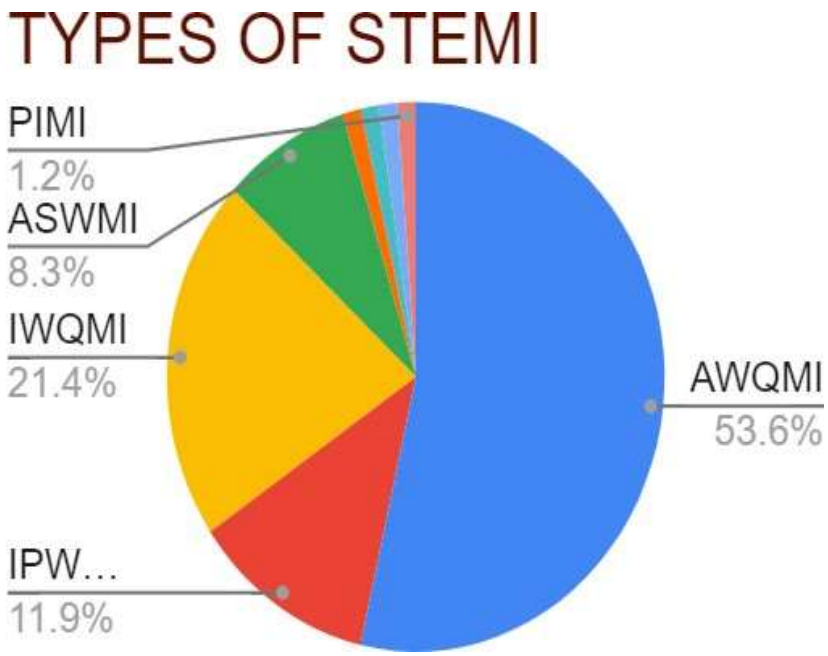

PAST MEDICATION HISTORY
30
20
10
0
NO OF PATIENTS
ANTIHYPERT...
ANTI DIABETIC
ANTI COAGU...
ANTA ACIDS
EXPECTORANT
MULTIVITAMIN
CORTICOST...
HEART RELA...
CLASS OF DRUGS

DIAGNOSIS:

CATEGORY	NO OF PATIENTS
STEMI	84
NSTEMI	16

TYPES OF STEMI:

TYPES OF STEMI	NO OF PATIENTS
AWQMI	45
IPWQMI	10
IWQMI	18
ASWMI	7
IWMI+RVMI	1
IWMI+RVF	1
ALMI	1
PIMI	1



PERCENTAGE OF DRUG DISTRIBUTION

CLASS OF DRUG DISTRIBUTION	% OF PATIENTS
ANTI COAGULANTS	
HEPARIN	91
ANTIPLATELETS	
ASPIRIN	78
CLOPITAB	89
ANTI ANGINAL	
NITROGLYCERINE	5
SORBITRATE	63
ANTI HYPERTENSIVE	

ACE INHIBITORS:	
ENALPRIL	74
BETA BLOCKERS:	
ATENOLOL	8
CARVEDILOL	58
CALCIUM CHANNEL BLOCKERS:	
AMLODIPINE	3
DIURETICS:	
FUROSEMIDE	49
SPIRINOLACTONE	30
THROMBOLYTICS:	
STK	13
STATINS:	
ATORVASTATIN	86
ANTI HISTAMINES:	
RANTAC	68
ALDOSTERONE RECEPTOR ANTAGONIST:	
EPLERENONE	20
LAXATIVES:	
DUPHALAC	52
ANTACIDS:	

PANTOP	33
BENZODIAZEPENES:	
RESTYL	42
ANTIPYRETIC:	
PCM	11
ANALGESIC:	
TRAMADOL	3
ANTIBIOTIC:	
MONOCEF	10
ANTIEMETIC:	
ZOFER	12

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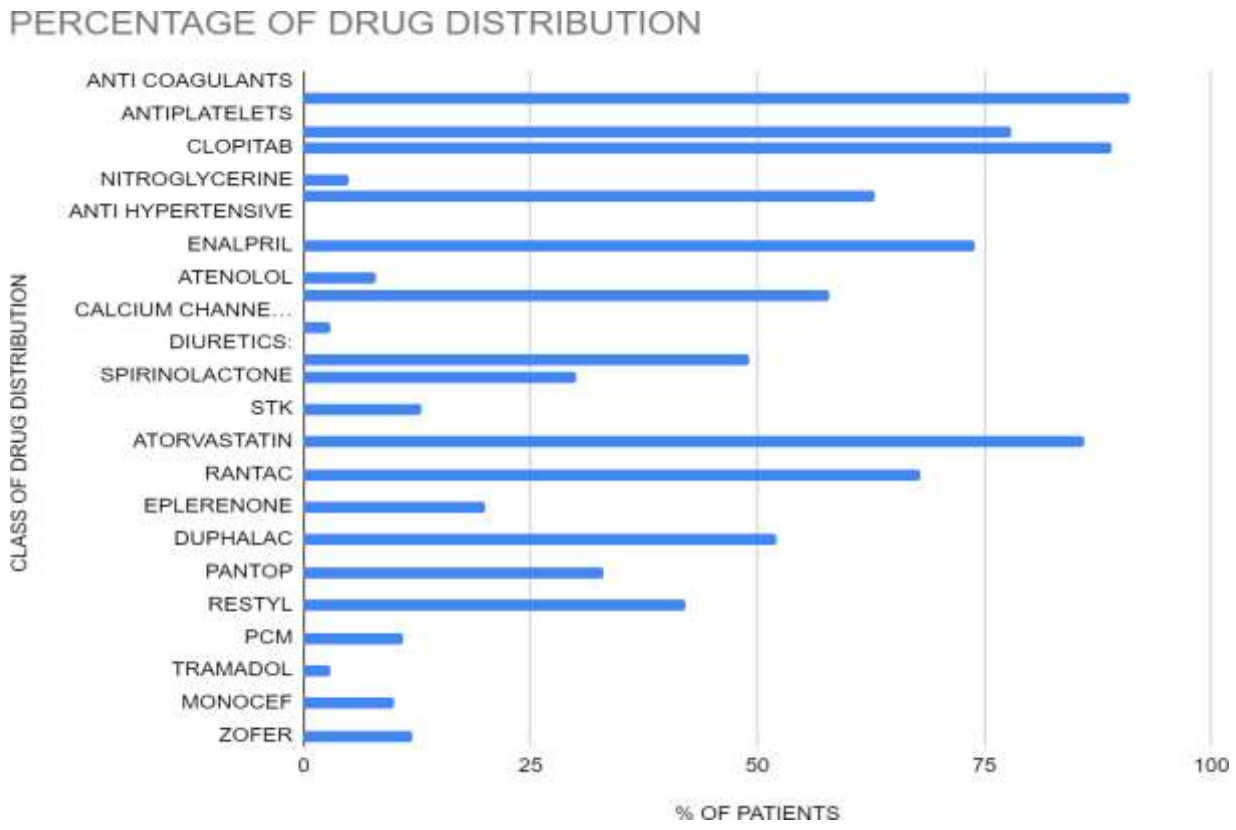

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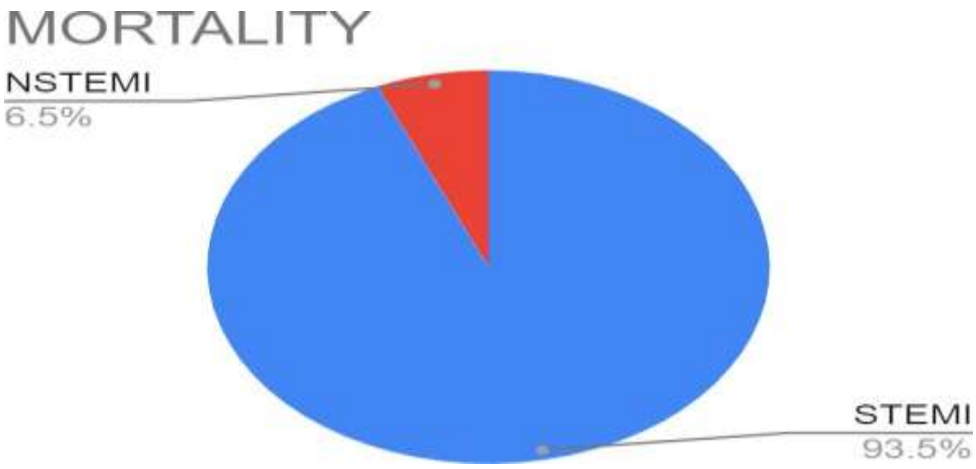
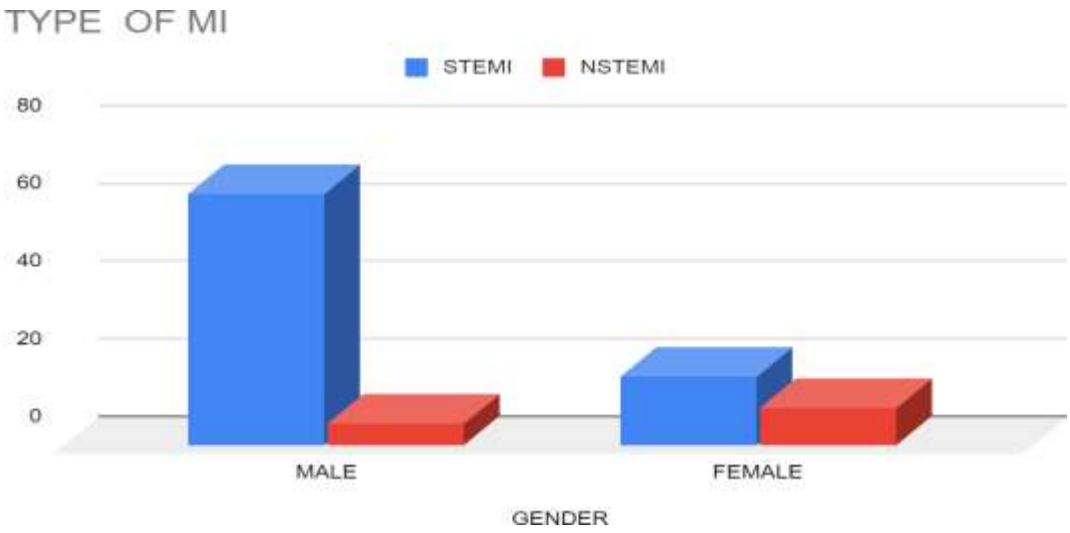
MORTALITY RATE

TYPES	NO OF PATIENTS
STEMI	29
NSTEMI	2

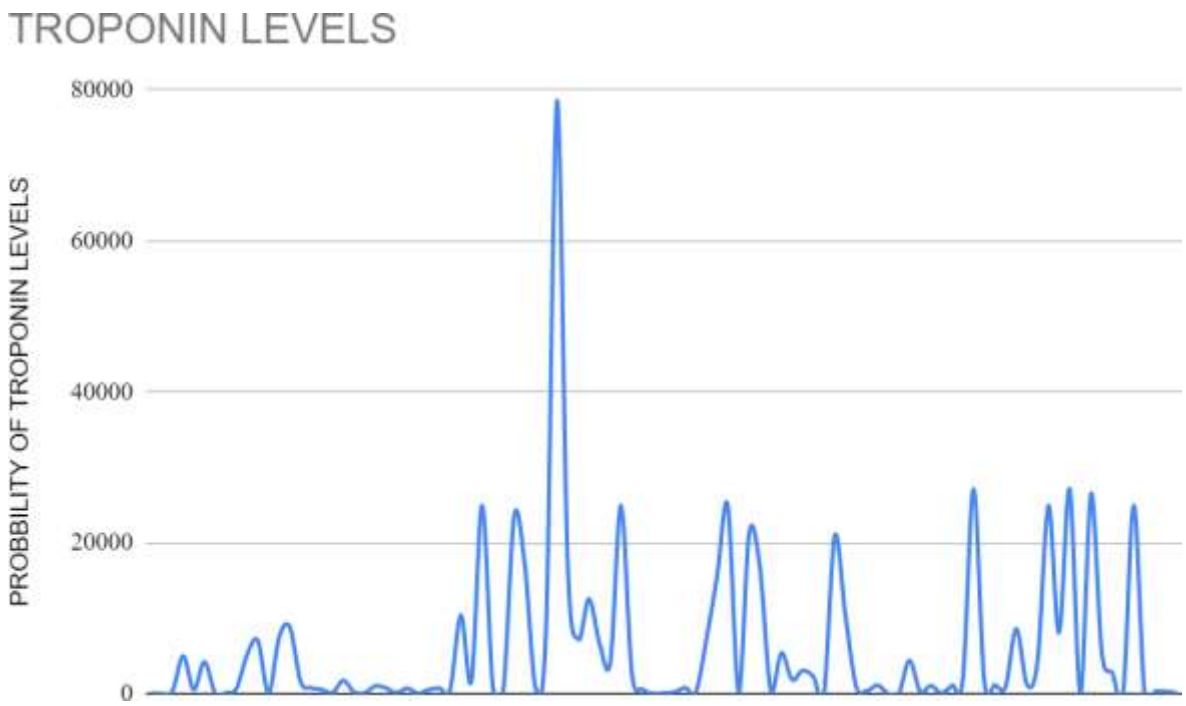


FREQUENCY OF MI:

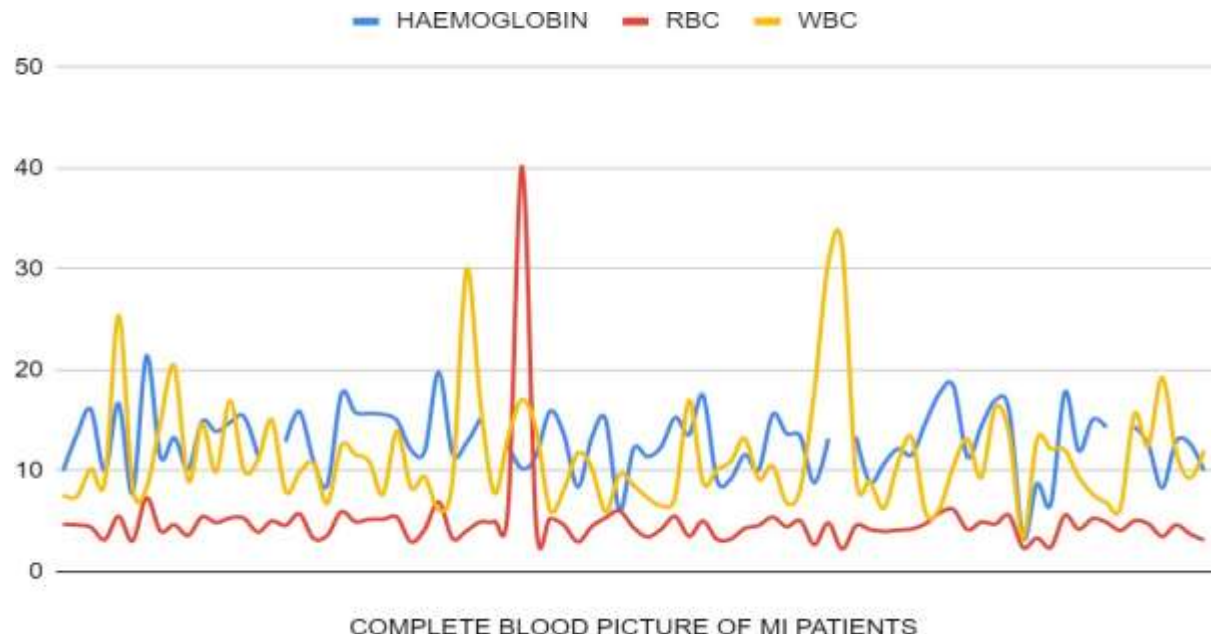


GENDER	TYPE OF MI frequency	
	STEMI	NSTEMI
MALE	65	6
FEMALE	18	10

TROPONIN LEVELS IN MI PATIENTS:

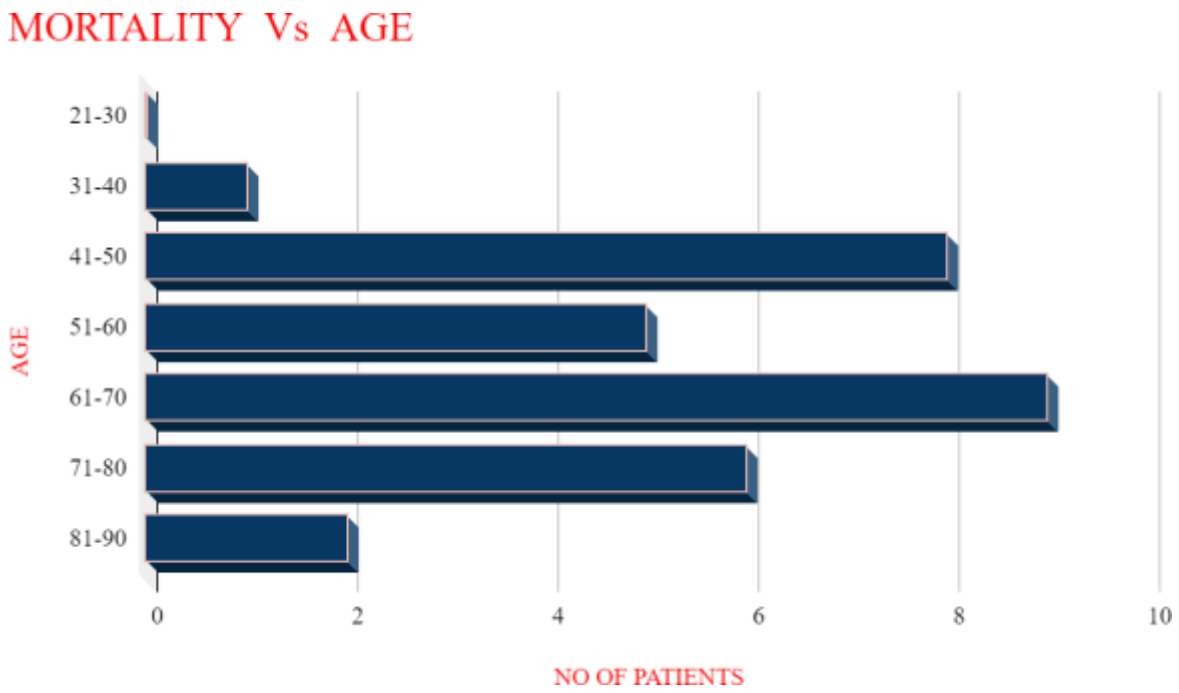


CBP OF MI PATIENTS:



COMPLETE BLOOD PICTURE OF MI PATIENTS

MORTALITY RANGE Vs AGE IN MI PATIENTS:



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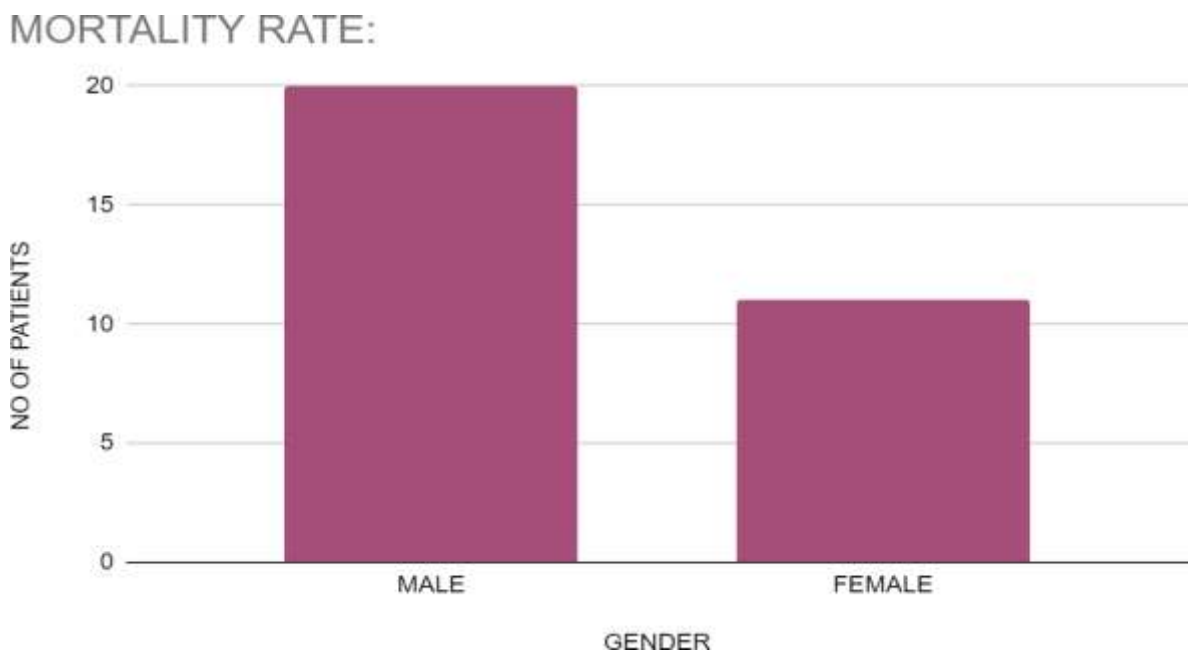
AGE	MORTALITY
21-30	0
31-40	1
41-50	8
51-60	5
61-70	9
71-80	6
81-90	2

MORTALITY RATE GRAPH ACCORDING TO GENDER:



MORTALITY RATE :

GENDER	NO OF PATIENTS
MALE	20
FEMALE	11

PERCENTAGE OF MORTALITY RATE IN MI PATIENTS:

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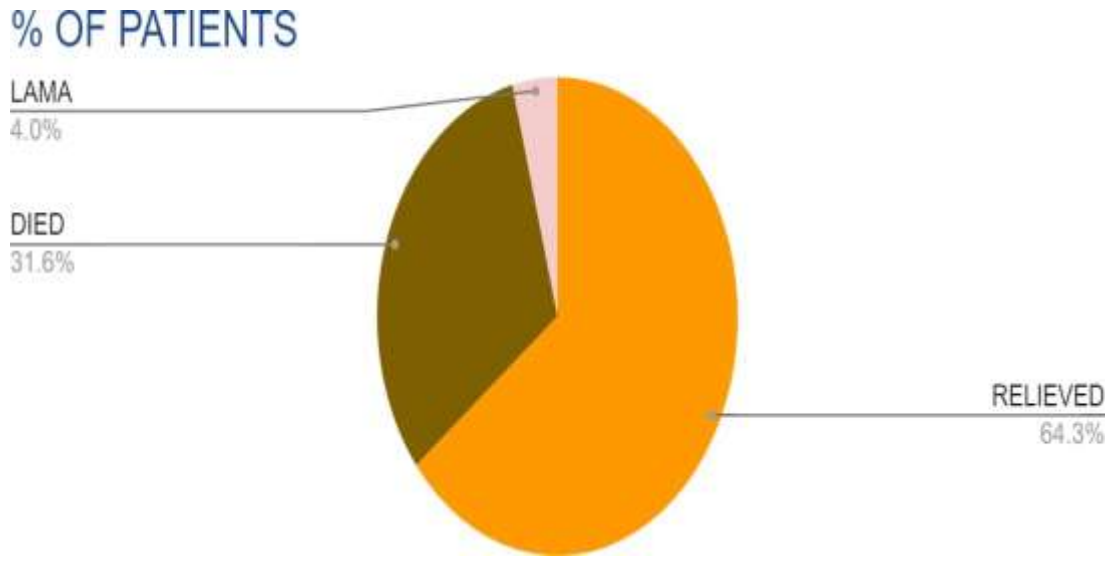
MORTALITY	% OF PATIENTS
RELIEVED	63.6
DIED	31.3
LAMA	4



STATISTICAL ANALYSIS: CORRELATION P-

VALUE TABLE:

CORRELATION VARIABLES	SIGNIFICANT VALUES
Past history Vs Diagnosis	0.001
Social history Vs diagnosis	0.001
types Vs frequency	0.004
Types vs mortality	0.001
Symptoms Vs risk factor	0.002
Diagnosis Vs treatment	0.001
Age Vs mortality	0.003
Gender Vs mortality	0.001

Shows the information regarding mean, standard deviation, and P -value ofvarious variables:

CHARACTERISTICS	N	MEAN	STANDARD DEVIATION	P VALUE
AGE	100	5.75	7.17	0.002
GENDER	100	2.15	0.34	0.005
SYMPTOMS	100	2.07	2.76	0.001
TYPES OF MI	100	1.05	1.57	0.005

MORTALITY RATE	100	1.35	1.90	0.007
DIAGNOSIS	100	3.4	4.80	0.003
TREATMENT	100	2.73	3.1	0.005
FREQUENCY OFMI	100	2.47	2.7	0.004
PAST HISTORY	100	1.85	1.46	0.001

DISCUSSION:

The study population includes 100 patients who were diagnosed with Myocardial Infraction. Majority of the population includes 61-70 years (27%) and 41-50 years (26%). Among these patients (100) males are 71% and females were 28%. The males were affected more in number when compared to females. Among our total study population the prevalence of STEMI is higher which sums up to 84% and NSTEMI which is only 16%. During our study period we observed that AWQMI is higher in number which is 45%, IPWQMI which is 10%, IWQMI which is 18%, ASWMI which is 7%. The Hypertension and Diabetes mellitus is most common morbidity observed in our study population which accounts for 47% and 32% respectively, less common are nervous and pulmonary disorders which are 8% and 5% respectively. Other co-morbidities accounts for kidney disorder and CAD. The various clinical features of MI were investigated and reported in our data forms. The profoundly observed symptoms among study population that were observed are chest pain, SOB, vomiting, nausea, giddiness, loss of conscious, sweating, fever and cough. The chest pain and SOB are seen in almost all cases with percentage of 83% and 41% respectively. Vomiting and nausea accounts for 21%, giddiness and loss of conscious account for 6%, cough (5%), sweating (5%), fever (5%), palpitation (1%), edema (1%). The frequency of MI is comparatively high if subject has social history - Alcohol, smoking or both, other narcotic products. We observed that among all patients in MI both alcohol and smoking are the most contributing factor of MI which accounts for 35%. The next major cause involves only alcohol 11% and smoking 7% and other narcotic products 7%. In few cases MI is occurred According to the study, 6% of patients having a family history of heart illness. the patient contributes. In few cases MI is occurred in patients who have medication history of Anti-hypertensive (28%), Anti-diabetic (15%) and other medications like anti-coagulants (7%), corticosteroids (2%). The primary goal in the management of MI are to avoid cardiac arrest, to decrease the size of infract, to decrease the disease induced mortality, progression of MI. The treatment options include different types of anti-thrombotic drugs,β blockers, CCB and non-pharmacological treatment. Treatment initiated with the parenteral anti-coagulants such as heparin. Later disease is managed with oral heparin for several months. According to prescribing trends in our study site the anti-coagulants like heparin was mostly prescribed parenteral drug during initial treatment of MI which accounts for 91% which are followed by aspirin and clopitab. The commonly prescribed dose of heparin is 5000 U QID. Aspirin (78%) and clopitab (89%) are the other most common prescribed drugs. The most commonly prescribed dose for aspirin is 75 mg OD and clopitab does is 75 mg OD.

Conclusion

In Myocardial Infraction cardiac muscle death occurs due to the lack of supply of blood, due to insufficient O2 supply

to the cardiac tissue. Males are more commonly prone to MI when compared to females. People with co-morbid conditions usually hypertension and diabetes mellitus have significantly increased risk for developing Myocardial Infraction. People with both Diabetes mellitus and hypertension have doubled risk of getting Myocardial Infraction than other single co-morbid conditions. Additionally people with habits of smoking and drinking alcohol have experienced poorer the standard of living and has increased mortality risk. **T**he standard of living was more significantly affected in patients with co-morbidities. Patients who have co-morbid conditions like hypertension and diabetes experienced significantly poorer quality of life than other co-morbid conditions. Most commonly prescribed drug classes were anti coagulants, anti-platelets, anti-anginals, anti-hypertensives, diuretics, laxatives, statins. High risk the patients were given PCI mostly. Dual anti-coagulant therapy was considered in intermediate patients and high mortality risk. Patients with low mortality were managed with single anti-coagulant therapy. In our study the mortality rate was high in patients with STEMI when compared to NSTEMI and the mortality is high in males when compared to females.

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