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Original Research Article

A Hospital Based Prospective, Observational, Cohort Study to Determine the Association Between Type of Arrhythmias and Site involved Along with Mortality in Consecutive Cases After Thrombolysis by Streptokinase within 24 Hours

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Abstract

Aim: To determine the association of type of arrhythmias and site of myocardial infarction.

Materials and methods: A hospital based prospective, observational, cohort study was conducted with 90 patients in the Department of General Medicine, Bokaro General Hospital, in Bokaro district of Jharkhand, India, during January 2018- December 2018. Detailed history regarding chest pain, palpitation, sweating, vomiting, dyspnea, giddiness was asked, past personal and family history was asked. General and systemic examination was done. Information was collected through a pre tested and structured proforma for each patient. Cases was studied for arrhythmias complicating AMI, in terms of their incidence, timing, duration, severity, type, relation to the involved site, reperfusion and end result. Patient who showed arrhythmias on monitor, but whose arrhythmias couldn't be recorded on ECG paper due to the transient nature of the arrhythmias, was included in the study as a positive case. Patient having VF or any other arrhythmias, who died before recording could be done or in whom urgency of the situation prohibited the recording, was considered as positive cases of arrhythmias.

Results: There was no significant association of ventricular arrhythmias, Bundle branch block (BBB), Sinus tachycardia, Iº and IIº AV block (AVB), Complete Heart Block (CHB) (IIIº), Sinus bradycardia and site of myocardial infarction as per Chi-Square test ($p>0.05$). There was no significant association of mortality and type of arrhythmias.

Conclusion: The most common arrhythmia after reperfusion with STK is ventricular tachycardia (24.4%) and least common is atrial ectopics (1.1%). Other common arrhythmias are AIVR (12.2%), VPB (7.8%), bundle branch blocks and first degree AV blocks. The most common mode of termination is pharmacological.

Keywords: bradycardia, myocardial infarction, ventricular arrhythmias

Introduction

Cardiovascular diseases are the top most cause of death in the world. As per world health organization, more people die of CVDs than any other cause[1]Over the last two decades, the incidence and prevalence of CVDs have increased. This has had a multi-fold impact on the global health and economic scene. Most of the burden, a huge 80% is borne by the low and middle countries of the world[2]

Acute Coronary Syndrome (ACS) represents a Global epidemic, and is intimidating large as the new epidemic afflicting population worldwide, especially in the sub-continent. According to the National Commission on Macro-economics and Health, there would be around 62 million patients with Coronary Artery Disease (CAD) by 2015 in India, and of these, 23 million would be younger than 40 years of age[3]4 CAD affects Indians with greater frequency and at a younger age than in the developed countries, as well as many other developing countries. As a leading cause of morbidity and mortality, ACS are major public health problems[4]5 By 2020 it is estimated that ACS will become a major cause of death in all the regions of the world. Many of these deaths are attributed to the development of arrhythmias during periods of myocardial infarction[5]6

There are two facets of CAD: Stable CAD and Unstable CAD which includes patients with acute coronary syndrome (Unstable angina, Non-ST elevation myocardial infarction, ST elevation myocardial infarction)[6]3

Acute myocardial infarction (AMI) is myocardial necrosis in a clinical setting consistent with acute myocardial ischemia and detection of elevated values of cardiac biomarkers (CK-MB/troponin-I) above the 99th centile of the upper reference limit 4 hours after starting of symptom.4 Complication includes arrhythmic, mechanical, inflammatory sequel, about 90% develops some form of cardiac arrhythmia. In 25% patients, such rhythm abnormalities manifest within first 24 hours and risk of ventricular fibrillation is maximum in the 1st hour and declines thereafter[4]5

In acute myocardial infarction (AMI), streptokinase and front-loaded alteplase regimens are commonly used for thrombolysis. Unfortunately, reperfusion is not always achieved, and the success of the therapy is limited by reocclusion. The balance between prothrombotic and thrombolytic processes can be shifted toward thrombolysis by administration of plasminogen activators; however, procoagulant effects of such drugs have been reported. These side effects are important because of a procoagulant state in acute coronary syndromes. In patients with AMI and thrombolytic therapy, markedly increased thrombin activation was associated with failure to open the occluded coronary artery and with a high reocclusion rate[5]6

As one pathway of thrombin stimulation of thrombolytics, activation of the contact phase of the coagulation by plasmin has been found in vitro. A recent clinical study measuring indirect plasmin markers proved the activation of the kallikrein-contact-phase system after streptokinase in patients with AMI, but no direct data on plasmin activation are available. Another pathway of activation of the kallikrein system may be the complement cascade.[7]7

Hence the present Prospective observational study was done at our tertiary care centre study to analyze the incidence of various arrythmias, frequency and type of arrhythmias in consecutive cases after thrombolysis by streptokinase within 24 hours.

Materials and Methods

A hospital based prospective, cohort study was conducted with 90 patients in the Department of General Medicine, Bokaro General Hospital, in Bokaro district of Jharkhand, India, during January 2018-December 2018.

Sample size calculation:

Dysrhythmias Induced by Streptokinase Infusion in Patients with Acute Myocardial Infarction Admitted to Cardiac Care Units in the Northwest of Iran was observed by Razieh Parizad. The study observed 87 (75%) patients had dysrhythmia. Taking this value as reference, the minimum required sample size with 10% margin of error and 5% level of significance is 73

patients. To reduce margin of error, total sample size taken is 90.

Inclusion criteria:

1. More than 18 years of age
2. Patients with documented Myocardial Infarction (MI) based on the following criteria: Third universal definition of myocardial infarction.
3. Detection of rise and/or fall of cardiac biomarkers (preferably cardiac troponin (cTn) with at least one value above the 99th percentile upper percentile limit) and at least one of the following:

- Symptoms of ischemia
- New or presumed new significant-segment T-waves (ST-T) changes or new left bundle branch block (LBBB)
- Development of pathologic Q waves in electrocardiogram (ECG)
- Imaging evidence of new loss of viable myocardium or new regional wall motion abnormality.

Cardiac death with symptoms suggestive of myocardial ischemia and presumed new ischemic ECG changes of new LBBB but death occurred before cardiac biomarkers obtained.

Exclusion criteria:

- Patients < 18years of age
- Patients with Congenital Heart Disease& conditions like Long QT Syndrome, Brugada, Arrythmogenic right ventricular dysplasia (ARVD) etc.
- Patients with valvular Heart disease
- Patients with electrolyte imbalance
- Patients on pro-arrhythmic medications which increase QT interval (QTc).
- Patients with a contraindication for thrombolysis

Methodology

Detailed history regarding chest pain, palpitation, sweating, vomiting, dyspnea, giddiness was asked, past personal and family history was asked. General and systemic examination was done. Information was collected through a pre tested and structured proforma for each patient.

The study was done on patients presenting with clinical features & ECG findings suggestive of ACUTE MYOCARDIAL INFARCTION.

In all the selected patients detailed history and physical examination was noted. Every patient was subjected to 12 lead ECG with serial monitoring. Diagnosis of arrhythmias was carried out as per AHA guidelines and treated accordingly. Every patient was put on Cardiac Monitor for 24 hours following thrombolysis by streptokinase in ICU were monitored.

The following investigation was carried out

• 12 lead-ECG
• 2D ECHO
• Serum Electrolytes
• Cardiac Markers
• Cardiac Monitoring
• Routine blood

Following standard treatment was given in Emergency:

Oxygen via mask, Analgesic such as Paracetamol, Diclofenac sodium, Tramadol. Anti-platelets and Vasodilators such as Sublingual nitroglycerine, Tab. Aspirin (600mg), Tab. Clopidogrel (300mg), Tab. Atorvastatin (80mg) was given according to the ECG findings.

Anticoagulant therapy such as low molecular weight heparin was given unless contraindicated.

Patients coming with cardiac failure and AMI treatment was inotropic support (e.g. Dopamine) and diuretics (e.g. furosemide) was started. ABC was secured in unconscious patients who came to ED with history of chest pain and ECG suggestive of Ischemia. Patient who came with Ventricular tachycardia or Ventricular fibrillation were given Defibrillation.

Patients coming with hypertension and AMI treatment were Sublingual nitrates, diuretics (e.g. furosemide), antihypertensive medication was given according to clinical presentation.

Patient was defibrillated if patient has come with ventricular tachycardia or ventricular fibrillation.

Patient was attended by the cardiologist within 15mins of arrival patient was shifted from ED to CCU (within 10mins of arrival) on cardiac trolley with oxygen.

Reperfusion therapy was given with one of the following medication in

• Streptokinase: 1.5million IU (45ml NaCl) over 1 hour

Contraindications of reperfusion therapy

• Systolic BP 180 mm Hg, Hemodynamic instability which develops in individuals with NSTEMI, GI hemorrhage, Peptic ulcer, Abdominal Aortic aneurysm, Recent cerebrovascular accident, Known Intracranial aneurysm, Recent surgery within 2 weeks, and Financial constrain.

• Patients who did not receive reperfusion therapy because of contraindication, Anticoagulants, Antiplatelets and other supportive treatment were given.

• Patient was kept in CCU for a period of 2 days (or more in complicated cases).

Routine investigations were noted.

• Cases was studied for arrhythmias complicating AMI, in terms of their incidence, timing, duration, severity, type, relation to the involved site, reperfusion and end result. Patient who showed arrhythmias on monitor, but whose arrhythmias couldn't be recorded on ECG paper due to the transient nature of the arrhythmias, was included in the study as a positive case.

• Patient having VF or any other arrhythmias, who died before recording could be done or in whom urgency of the situation prohibited the recording, was considered as positive cases of arrhythmias.

Statistical Analysis

Quantitative data is presented with the help of Mean and Standard deviation. Comparison among the study groups is done with the help of unpaired t test as per results of normality test. Qualitative data is presented with the help of frequency and percentage table. Association among the study groups is assessed with the help of Fisher test, student't' test and Chi-Square test. 'p' value less than 0.05 is taken as significant.

Results

Table 1: Age and Gender Distribution of patients

Age (years)	Male		Female		Total		p Value
	N	%	N	%	N	%	
21-30 years	3	3.3%	3	3.3%	6	6.7%	>0.05
31-40 years	7	7.8%	1	1.1%	8	8.9%	
41-50 years	12	13.3%	5	5.6%	17	18.9%	
51-60 years	12	13.3%	10	11.1%	22	24.4%	
61-70 years	19	21.1%	10	11.1%	29	32.2%	
71-80 years	4	4.4%	4	4.4%	8	8.9%	
Total	57	63.3%	33	36.7%	90	100%	
Mean ± SD	54.39 ± 13.37		56.55 ± 13.44		55.18 ± 13.37		

The mean age of male and female patients was 54.39 ± 13.37 years and 56.55 ± 13.44 years respectively. The difference was statistically not significant as ($p>0.05$).

Table 2: Association of ventricular arrhythmias and Site of myocardial infarction

Site	Total cases	Ventricular arrhythmias	%	p Value
Anterior	23	7	30.4%	>0.05
Antero-lateral	15	6	40%	
Antero-septal	14	7	50%	
Inferior	26	4	15.4%	
Inferior-lateral	7	3	42.9%	
Inferior + right ventricular	2	1	50%	
Inferior + anterior	1	1	100%	

The incidence of ventricular arrhythmias was most in Antero-septal (50%) followed by Inferior-lateral (42.9%), Antero-lateral (40%), Anterior (30.4%) and Inferior wall (15.4%). There was no significant association of ventricular arrhythmias and infarction as per Chi-Square test ($p>0.05$).

Table 3: Association of Bundle branch block (BBB) and Site of myocardial infarction

Site	Total cases	BBB	%	P-value
Anterior	23	6	26.1%	>0.05
Antero-lateral	15	4	26.7%	
Antero-septal	14	7	50%	
Inferior	26	2	7.7%	
Inferior-lateral	7	1	14.3%	

The incidence of Bundle branch block (BBB) was most in Antero-septal (50%) followed by Antero-lateral (26.7%), Anterior (26.1%), Inferior-lateral (14.3%), and Inferior wall (7.7%). There was no significant association of Bundle branch block (BBB) and site of myocardial infarction as per Chi-Square test ($p>0.05$).

Table 4: Association of Sinus tachycardia and Site of myocardial infarction

Site	Total cases	Sinus tachycardia	%	p-value
Anterior	23	8	34.8%	>0.05
Antero-lateral	15	5	33.3%	
Antero-septal	14	3	21.4%	
Inferior	26	4	15.4%	
Inferior-lateral	7	1	14.3%	

The incidence of Sinus tachycardia was most in Anterior (34.8%) followed by Antero-lateral (33.3%), Antero-septal (21.4%), Inferior (15.4%), and Inferior-lateral wall (14.3%). There was no significant association of Sinus tachycardia and site of myocardial infarction as per Chi-Square test ($p>0.05$).

Table 5: Association of Iº and IIº AV block (AVB) and Site of myocardial infarction

Site	Totalcases	Iº and IIºAVB	%	p-value
Anterior	23	4	17.4%	>0.05
Antero-septal	14	2	14.3%	
Inferior	26	10	38.5%	
Inferior Posterior	1	1	100%	

The incidence of Iº and IIº AV block (AVB) was most in Inferior (38.5%) followed by Anterior (17.4%) and Antero-septal (14.3%). There was no significant association of Iº and IIº AV block (AVB) and site of myocardial infarction as per Chi-Square test (p>0.05).

Table 6: Association of Complete Heart Block (CHB) (IIIº) and Site of myocardial infarction

Site	Total cases	CHB (IIIº)	%	p-value
Anterior	23	4	17.4%	>0.05
Antero-lateral	15	1	6.7%	
Inferior	26	4	15.4%	
Inferior-lateral	7	1	14.3%	
Inferior + right ventricular	2	1	50%	
Sub-endocardial	1	1	100%	
Total	90	12	100%	

The incidence of Complete Heart Block (CHB) (IIIº) was most in Anterior (17.4%) followed by Inferior (15.4%), Inferior-lateral (14.3%) and Antero-lateral (6.7%). There was no significant association of Complete Heart Block (CHB) (IIIº) and site of myocardial infarction as per Chi-Square test (p>0.05).

Table 7: Association of AIVR and Site of myocardial infarction

Site	Total cases	AIVR	%	p-value
Inferior	26	9	34.6%	>0.05
Inferior + right ventricular	2	1	50%	
Inferior + posterior	1	1	100%	
Total	90	11	100%	

The incidence of AIVR was most in Inferior (34.6%) followed by 1 case each in Inferior + right ventricular and Inferior + posterior wall. There was no significant association of AIVR and site of myocardial infarction as per Chi-Square test (p>0.05).

Table 8: Association of Mortality and Type of arrhythmias

Types	Total cases	Mortality	%	p Value
Ventricular tachycardia (VT)	22	9	40.9%	>0.05
Sinus tachycardia	21	4	19.1%	
Bundle branch block (BBB)	20	3	15%	
Iº and IIº AV block (AVB)	17	3	17.6%	
Complete Heart Block (CHB) (IIIº)	12	2	16.7%	
AIVR	11	2	18.2%	
Ventricular Premature Beats (VPB)	7	1	14.3%	
Supraventricular Tachycardia (SVT)	3	1	33.3%	
Atrial Fibrillation (AF)	2	0	2.2%	
Atrial ectopics	1	0	1.1%	

The incidence of mortality was most in Ventricular tachycardia (40.9%) followed by Supraventricular Tachycardia (33.3%), Sinus tachycardia (19.1%), AIVR (18.2%), Iº and IIº AV block (AVB) (17.6%), Complete Heart Block (CHB) (IIIº) (16.7%) and Bundle branch block (15%) and Ventricular Premature Beats (14.3%). There was no significant association of mortality and type of arrhythmias as per Chi-Square test ($p>0.05$).

Discussion

Myocardial ischemia is characterized by ionic and biochemical alterations, creating an unstable electrical substrate capable of initiating and sustaining arrhythmias and infarction creates areas of electrical inactivity and blocks conduction, which also promotes arrhythmogenesis. It has been found that many serious arrhythmias develop before hospitalization, even before the patient is brought to hospital. At least 75% of patients with AMI have arrhythmia in the peri-infarct period, and also that majority of deaths occur secondary to development of arrhythmias[8]

Mhatre MA et al[9]prospective observational study analyzing the incidence, frequency and type of arrhythmias in relation to the site of infarction observed maximum incidence of AMI was in 41-70 years of age. Percentage of females is steadily rising from 41 years onwards and is equal to that of males in 71-80 years. There are only 5% cases below the age group of 40 years those too only males. Over all the number of male cases is highly significant (74%) as compared to females (26%).

In the present study, the site of myocardial infarction in majority of the patients (57.8%) was anterior wall [anterior (25.6%), anterolateral (16.7%) and antero-septal (15.5%)] followed by inferior wall (40%) [inferior (28.9%), inferior-lateral (7.8%), inferior and right ventricular (2.2%) and inferior and posterior wall (1.1%)]. 1 (1.1%) patient had both anterior as well as inferior wall infarction and 1 (1.1%) patient had sub-endocardial infarction. These findings were consistent with the studies of Mhatre MA et al[9]Shah MJ et al[10]Taheri L et al[11]and Marangmei L et al[12]

Mhatre MA et al[9]131 prospective observational study analyzing the incidence, frequency and type of arrhythmias in relation to the site of infarction reported many of the cases presented with more than one type of arrhythmia. Incidence of various types of arrhythmias in AMI were ventricular arrhythmias in a total of 32% of patients of which 24% had VT and 8% had VPBs.

Shah MJ et al[10]prospective clinical study reported most common arrhythmia in Acute Anterior Wall MI was VPC (36.23%). Others were Ventricular Tachycardia (15.94%), LBBB (11.6%), and RBBB (11.6%). Most common arrhythmia in acute

Inferior wall MI was CHB (26.92%), and others being various AV blocks, VPCs, RBBB (11.53%), LBBB (7.69%) and others.

Taheri L et al[11]Ex-post facto study found most arrhythmia was in STK Ventricular tachycardia (20.7%). Just in 8 cases (5.3%), it changed to ventricular fibrillation, in control group the ventricular fibrillation was observed in 13 patients (8.7%), it was found out that there was a significant statistical relation between STK and decreasing arrhythmia incidence.

Marangmei L et al[12]Descriptive analytic study found majority of the patients had anterior wall myocardial infarction (AWMI) 61% (anterior wall, anteroseptal, anterolateral), 38% patients had inferior wall myocardial infarction (IWMI; inferolateral, inferior wall, inferoposterior, inferior +right ventricle). One patient had antero-IWMI.

In our study, the incidence of supraventricular arrhythmias was 6.6% with 3 (3.3%) cases of Supraventricular Tachycardia (SVT), 2 (2.2%) cases of Atrial Fibrillation (AF) and 1 (1.1%) case of Atrial ectopics. Mhatre MA et al[9]noted similar observations in their study.

It was observed in the present study that the incidence of ventricular arrhythmias was 32.2% with 22 (24.4%) cases of Ventricular Tachycardia (VT), 11(12.2%) cases of AIVR and 7 (7.8%) cases of Ventricular Premature Beats (VPB). Similar observations were noted in the studies of Rajhans R et al.[13] and Mhatre MA et al[9]

Rajhans R et al[13]24 hour Holter study many cases presented with more than one type of arrhythmia. VPB (66%) and AIVR (42%) were the most common arrhythmias followed by NSVT and Ventricular bigeminy/couplets. AF was present in 3 cases 1 of which died and was reverted back to sinus rhythm. One patient each of VF and SVT was there and VF patient expired. Sinus tachycardia was present in 27 (54%) of the cases while bradycardia in 18 (36%) of the cases.

Mhatre MA et al[9]prospective observational study analyzing the incidence, frequency and type of arrhythmias in relation to the site of infarction observed overall incidence of ventricular arrhythmias being 33% of which VT was 24%, VPB, were 8% and ventricular bigeminy being 1%.Also overall incidence is more in anterior and lateral wall MI than inferior wall alone.Sinus tachycardia in 23% and sinus bradycardia in 12%. SVT was present in 3%, AF in 2% and atrial ectopic in 1%. Bundle branch block was seen in 22%, complete heart block in 13% and AV-block (I0and II0) in 19% of patients.

It was observed in the present study that the incidence of ventricular arrhythmias was most in Antero-septal (50%) followed by Inferior-lateral (42.9%), Antero-lateral (40%), Anterior (30.4%) and Inferior wall (15.4%). There was no significant association of ventricular arrhythmias and site of myocardial infarction as per Chi-Square test ($p>0.05$). There were 10 (11.1%) cases of Right bundle branch block (RBBB) while there were 7 (7.8%) and 3 (3.3%) cases of Left bundle branch block (LBBB) and Bifascicular block respectively. This is consistent with the study of Shah MJ et al[10]

It was observed in our study that the incidence of Bundle branch block (BBB) was most in Antero-septal (50%) followed by Antero-lateral (26.7%), Anterior (26.1%), Inferior- lateral (14.3%), and Inferior wall (7.7%). There was no significant association of Bundle branch block (BBB) and site of myocardial infarction as per Chi-Square test ($p>0.05$). This is in concordance to the study of Mhatre MA et al[9]

It was observed in our study that the incidence of Sinus tachycardia was most in Anterior (34.8%) followed by Antero-lateral (33.3%), Antero-septal (21.4%), Inferior (15.4%), and Inferior-lateral wall

(14.3%). There was no significant association of Sinus tachycardia and site of myocardial infarction as per Chi-Square test (p>0.05).This is similar to the studies of Mhatre MA et al[9] and Rajhans R et al[13]

Mhatre MA et al[9]prospective observational study observed highest incidence was seen in anterior and lateral wall MI whereas lowest incidence in inferior wall MI in incidence of sinus tachycardia in relation to the site of infarction.

Rajhans R et al[13]24 hour Holter study assessing the information regarding overall incidence, course and prognosis of arrhythmias post thrombolysis in a patient of STEMI especially for the first 24 hours using Holter monitor reported significant association p-value was <0.05 between the various types of MI with sinus tachycardia.

In the present study, the incidence of Iº and IIº AV block (AVB) was most in Inferior (38.5%) followed by Anterior (17.4%) and Antero-septal (14.3%). There was no significant association of Iº and IIº AV block (AVB) and site of myocardial infarction as per Chi-Square test (p>0.05). This is comparable to the study of Rajhans R et al[13]

In our study, the incidence of Complete Heart Block (CHB) (IIIº) was most in Anterior (17.4%) followed by Inferior (15.4%), Inferior-lateral (14.3%) and Antero-lateral (6.7%). There was no significant association of Complete Heart Block (CHB) (IIIº) and site of myocardial infarction as per Chi-Square test (p>0.05). This is concordant to the studies of Mhatre MA et al[9]Marangmei L et al[12]and Rajhans R et al[13]

Marangmei L et al[12]Descriptive analytic study reported Arrhythmia was more with IWMI patients (79%) than in AWMI patients (69%), but was not statistically significant. Ventricular premature complex (VPC) was most common (23%) followed by sinus tachycardia in 21%, heart block (first, second, and third degree) was present in 15% and, bundle branch block (right and left bundle branch block) was present in 11%, and ventricular tachycardia in 7% of the patients.

Rajhans R et al[13]24 hour Holter study reported association between VPB and MI showed significant association between various MI and VPC and VPBs are common in anterior wall MI rather than inferior wall. p-value <0.05. Significant association was seen in between nonsustained VT and different MIs. p-value <0.05. There is no association between various MIs and sustained VT. No association was found between AIVR and various MIs. Significant association between ventricular bigeminy and the diagnosis of MI was clearly seen.

It was observed in the present study that the incidence of AIVR was most in Inferior (34.6%) followed by 1 case each in Inferior + right ventricular and Inferior + posterior wall. There was no significant association of AIVR and site of myocardial infarction as per Chi- Square test (p>0.05). These findings were consistent with the studies of Chiwhane A[14]Mhatre MA et al[9]Rajhans R et al[13]and Marangmei L et al[12]

Chiwhane A132 study on rhythm disturbances in acute myocardial infarction (AMI) and its effect on outcome reported Tachyarrhythmias (83%) were common in AWMI and bradyarrhythmias (86.11%) were common in IWMI, these were statistically significant.

Mhatre MA et al[9]prospective observational study analyzing the incidence, frequency and type of arrhythmias in relation to the site of infarction reported whelming majority in inferior wall in incidence of sinus bradycardia.

Rajhans R et al[13]24 hour Holter study assessing the information regarding overall incidence, course and prognosis of arrhythmias post thrombolysis in a patient of STEMI especially for the first 24 hours

using Holter monitor reported a positive correlation between IWMI and sinus bradycardia. While bradycardia was less common in AWMI.p-value<0.05.

Marangmei L et al[12]Descriptive analytic study reported comparing the various conduction abnormalities with the site of infarction showed VPC in 21% with AWMI and 24% with IWMI, heart block in 6% with AWMI and 29% with IWMI, and bundle branch block in 13% with AWMI and 8% with IWMI. There was no statistical significant difference between the above conduction abnormality and site of infarction. However, sinus Bradycardia was seen in 8% with AWMI compared to 24% with IWMI, so it was more common in the later with P-value of 0.05 showing statistical significance. Five of 61 patients with AWMI and two of 38 patients with IWMI developed ventricular tachycardia. Ventricular tachycardia was more common when anterior and IWMI was associated with lateral wall involvement.

It was observed in our study that 25 (27.8%) patients died. The study by Mhatre MA et al[9] reported morality in STK group (12.5%) was lower than mortality in non-STK group (55.5%). No mortality was seen in patients who received streptokinase and developed reperfusion arrhythmias depicting successful reperfusion.

The incidence of mortality in the present study was most in Ventricular tachycardia (40.9%) followed by Supraventricular Tachycardia (33.3%), Sinus tachycardia (19.1%), AIVR (18.2%), Iº and IIº AV block (AVB) (17.6%), Complete Heart Block (CHB) (IIIº) (16.7%) and Bundle branch block (15%) and Ventricular Premature Beats (14.3%). There was no significant association of mortality and type of arrhythmias as per Chi-Square test (p>0.05).Similar observations were noted in the studies of Shah MJ et al[10]Hamid S et al[15]and Chiwhane A[14]

Conclusion

AMI occur in patients above 60 years of age and they are more common in males than in females. The most common arrhythmia after reperfusion with STK is ventricular tachycardia (24.4%) and least common is atrial ectopics (1.1%). Other common arrhythmias are AIVR (12.2%), VPB (7.8%), bundle branch blocks and first degree AV blocks. The most common mode of termination is pharmacological. The incidence of mortality was most in Ventricular tachycardia (40.9%) followed by Supraventricular Tachycardia (33.3%), Sinus tachycardia (19.1%), AIVR (18.2%), Iº and IIº AV block (AVB) (17.6%), Complete Heart Block (CHB) (IIIº) (16.7%) and Bundle branch block (15%) and Ventricular Premature Beats (14.3%). There was no significant association of mortality and type of arrhythmias

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