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Internal Medicine

POST MYOCARDIAL INFARCTION ARRHYTHMIAS IN 1st 24 HOURS

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ABSTRACT

BACKGROUND: Post myocardial infarction arrhythmias can very commonly lead to death. Hence we studied the various arrhythmias arising within the first 24 hours of myocardial infarction.

METHODS: Myocardial infarction was confirmed with detailed history, clinical examination, laboratory investigations, and 12 lead electrocardiogram. 50 patients who presented within 1 hour of onset of symptoms were included in study. Patients' cardiac rhythm was monitored for at least 72 hours in intensive coronary care unit.

RESULTS: Incidence of various Tachyarrhythmias were:
1. Ventricular tachycardia (8%),
2. Atrial Fibrillation (4%),
3. Supraventricular tachycardia (2%).
4. Ventricular fibrillation was not observed.

CONCLUSION: Arrhythmias carrying very high mortality were complete heart block, bilateral bundle branch block and right bundle branch block. Arrhythmias with anterior wall infarction carried bad prognosis while arrhythmias with inferior wall infarction had good prognosis.

INTRODUCTION
Myocardial infarction is the ideal situation for development of cardiac arrhythmias.

Various Contributing Factors Are Discussed As Follows:-
1. Myocardial injury
2. Hypoxia
3. Acidosis
4. Electrolyte imbalance
5. Hemodynamic changes
6. Catecholamines

Mechanism Of Production Of Arrhythmias In Post MI Period:
1. Enhancement or decrease in automaticity of certain pacemakers and potential pacemakers.
2. Focal Re-Excitation
3. Bradycardia
4. Local Re-Entry
5. Injury or Edema, Ischemia

Disturbances of Sinus Impulse Formation and Conduction:
Sinus Tachycardia:-
Normal sinus rhythm except rate between 101 and 160 beats per minute.

Sinus Bradycardia:-
Normal sinus rhythm except rate between 45 and 59 beats per minute.

Sinus Arrhythmia:-
Incidence is about 8 to 11 per cent. It is more common in inferior wall infarction.

Sinus Arrest And Sino-atrial (sa) Block:
In sinus arrest, SA node fails to discharge the impulse whereas in SA block impulse is blocked in SA node and fails to reach the atrium.

Sinus Arrest:
1. Absence of 'p' wave and QRS and T complexes.
2. Long P-P interval unrelated to the P-P cycle of the basic rhythm.

SA Block:
• First degree SA block: not possible to diagnose on surface electrocardiogram.

Mobitz Type – II SA block:
1. An occasional absence of 1 or more beats of P, QRS and T complexes.
2. P-P intervals including SA block are almost exact multiples of P-P cycles of basic rhythm.

Wenchebach (Mobitz Type –I) SA Block:
1. Long P-P intervals due to SA block are not multiples of P- P cycle of the basic rhythm.
2. P-P intervals preceding the longer pause become progressive shorter until a dropped beat occurs.

Third Degree SA Block:
1. Complete Absence of P, QRS and T complexes.
2. Long P-P intervals are multiples of P- P cycles of the basic rhythm

Atrial Arrhythmias:- These include atrial premature contraction, atrial tachycardia, flutter and fibrillation.

Atrial Fibrillation: Its incidence varies between 6 and 16 per cent. Untreated atrial fibrillation usually has rapid ventricular rate (120 to 160/minute) which often leads to congestive heart failure, shock and thrombo-embolic phenomenon

Atrial Flutter:
1. Presence of flutter waves produces characteristic "Saw-tooth" appearance.
2. Atrial rates between 250 and 350 beats per minute.

Av Junctional Arrhythmias:
• **Junctional Premature Beats:**
They originate from Nodal His area or His bundle itself. If reflects ischemic injury to junctional area. It may trigger junctional tachycardia.

• **Junctional Escape Rhythm:**
Junctional tissue acts as a pacemaker instead of SA node. Rate is 40 to 60 beats/min. Configuration and position of 'P' wave is determined by site of junctional focus. It is nearly always observed in high degree or

complete AV block associated with acute inferior wall infarction. Main dangers are:
(a) It predisposes to ectopic ventricular activity.
(b) It adversely affects the left ventricular function.

• **Junctional tachycardia:**
AV junctional rhythm with a rate faster than 60 beats per minute**.**

Ventricular Arrhythmias:
Ventricular tachyarrhythmias, especially ventricular fibrillation, are the most serious and often life threatening arrhythmias.

Ventricular Premature Contraction:
Most common cardiac arrhythmia after acute myocardial infarction. Its incidence is about 40 to 80 percent. It may predispose to ventricular tachycardia, flutter or fibrillation in following conditions (Malignant extra-systole).
1. Rate of 6 or more beats/minute,
2. R on T phenomenon,
3. Two or more beats in succession,
4. Multifocal VPCs,
5. Ventricular bigeminy,
6. Increasing frequency of VPCs.

Ventricular Tachycardia:
Previously its incidence was thought to be very low (less than 1%) because of lacking cardiac monitoring system. Its true incidence is around 10 to 30 percent in coronary care units. Some authors define it as VPCs occurring consecutively for 3 more beats, whereas some authors consider 6 or more VPCs occurring consecutively as evidence of VT.

The term is used when three or more consecutive VPC's occur.

Non-paroxysmal Ventricular Tachycardia: (Idioventricular-Tachycardia or- Accelerated idioventricular rhythm):-
1. AIVR also called "slow ventricular tachycardia" a ventricular rhythm with a rate of 60-100 beats/min, often occurs transiently during fibrinolytic therapy at the time of reperfusion.

For the most part, AIVR whether it occurs in association with fibrinolytics therapy or spontaneously, is benign and does not presage the development of classic ventricular tachycardia. Most episodes of AIVR don't require treatment.

Paroxysmal Ventricular Tachycardia:
1. Onset and termination abrupt,
2. Rate: 180 to 250 beats/minute.
3. It produces significant impairment of cardiac function and cerebral and renal blood flow and VF and sudden death**.**

Ventricular Fibrillation:
It is commonly fatal and worst cardiac arrhythmia in spite of all available therapeutic measures. Its incidence is estimated to be about 10 percent. Primary ventricular fibrillation which occurs in the absence of shock or marked congestive heart failure is having better prognosis. Secondary ventricular fibrillation occurring as a terminal rhythm in a drying heart from circulatory failure is invariably fatal.

Ventricular Flutter:
1. Regularly occurring undulations of equal amplitude throughout.
2. Separation of QRS complex from S-T and T waves is not possible.
3. Each flutter wave consists of a round upper and lower end which corresponds to ordinary R and S (or Q-S) waves.
4. Rate is usually between 180 and 350 beats/minute.

Atrioventricular Conduction Disturbances:
Atrioventricular Block: AV Block of varying degrees may be observed in acute myocardial infarction, particularly when the inferior wall is involved. Incidence depends upon the location of myocardial infarction. First degree AV block and wenckebach AV block (mobitz – Type-I) primarily occur in inferior myocardial infarction whereas Mobitz Type – II AV block is observed only in anterior Myocardial infarction.

In complete AV block, the site of the block is at the AV nodal area in diaphragmatic myocardial infarction whereas the block is at the infranodal area in anterior myocardial infarction. Complete AV block in inferior wall infarction is usually reversible whereas the block in

anterior wall infarction is, as a rule, permanent.

Intraventricular blocks (Bundle Branch Blocks):
Right bundle branch block:
Right bundle branch blocks are twice common as compared to left bundle branch block. These blocks have been observed in 6 to 7 % of cases. They have been associated with a mortality of 50 to 60%. It is often transient in nature. It may well be as Godman et al (1970) have suggested that it is the extent of myocardial damage causing the bundle branch block that determines the prognosis rather than type of conduction disorder.

Left Anterior Hemi Block (LAHB):
More common than bifascicular block. It is more common in acute anterior wall infarction. The reason for the appearance of the LAHB in acute inferior wall infarction is not understood. It has been suggested that pre-existing left coronary artery disease may produce hemiblock, if collaterals from the right coronary are interrupted. Prognosis is better in contrast to poor with bifascicular block. The mortality associated with RBBB and LAHB appears to be in the range of 50 to 60%. The incidence of RBBB with LAHB in acute infarction is 4 to 8%.

Left Bundle Branch Block (LBBB):
Its incidence varies from 2.5 to 4% in cases with acute infarction. (Norris and croxson 1970 , Godmenet al , 1970) At least 85% of these blocks are present at the time of hospital admission. Mortality is about 55% with similar death rate as RBBB.

MATERIALS AND METHODS
The material of this study consisted of 50 patients who were admitted in the intensive care unit.

The presence of acute myocardial infarction was documented by:
1. Detailed History,
2. Physical Examination,
3. Laboratory Investigations,
4. 12 Leads ElectroCardioGram.

50 patients who presented within 1 hour of onset of symptoms were included in study.

A special preform was prepared to note down complete record of symptomatology, mode of onset, past history, family history, personal history, presence of various coronary risk factors and physical findings.

Laboratory investigations on admission included hemoglobin, erythrocyte sedimentation rate, W.B.C. count, serum glutamic oxaloacetic transaminase, serum cholesterol, blood urea, serum creatinine, blood sugar and serum electrolytes.

X-Ray chest and 12 leads E.C.G. of each patient were taken on admission. Patients' cardiac rhythm was monitored for at least 72 hours in intensive coronary care unit.

Diagnosis of Myocardial Infarction was made when patients presenting with severe chest pain >20 minutes duration- consistent with that of ST segment elevation with/without fresh appearance of Q wave of more than 0.04 seconds duration and having amplitude of more than 25% of 'R' wave in the same lead-together with elevated levels of serum CPK-MB and/or Troponin-I.

Serial electrocardiograms were taken at the time of admission, after 24 hours, 48 hours, 72 hours and at the time of transfer to ward.

OBSERVATIONS AND RESULTS
Table I. Age Distribution Of Myocardial Infarction

Age (years)	No of cases (n)	Percentages (%)
20-30	1	2
31-40	2	4
41-50	11	22
51-60	22	44
61-70	13	26
71-80	1	2
80 above	0	0

Maximum incidence (44%) was found in sixth decade. The youngest

patient was 30 years old, while the oldest was 72 years old. Acute infarction was more than common in 5th, 6th and 7th decades (92%).

TABLE II: Gender Distribution Among 50 Cases Of Acute Myocardial Infarction.

Gender	No. of cases (n)	Percentage (%)
Male	41	82
Female	9	18

Myocardial infarction was more common in males, with the ratio being 4.5: 1. (Male: Female).

Table III: Incidence Of Common Presenting Symptoms.

SYMPTOMS (Total=50)	(n)	ANTERIOR MI (n)	INFERIOR MI (n)	ANT.+INFERIOR (n)
CHEST PAIN	48 (96%)	27	19	2
VOMITING	26 (52%)	15	11	0
PERSPIRATION	25 (50%)	17	9	1
DYSPNEA	16 (32%)	9	8	1
PALPITATION	7 (14%)	2	5	0
GIDDINESS	6 (12%)	2	4	0
CONVULSION	1(2%)	0	1	0

Common presenting symptoms were chest pain (96%), perspiration (50%), vomiting (52%), breathlessness (32%), and palpitation (14%), only few cases presented with rare symptoms like giddiness, pain less infarct (4%) and convulsion (2%). Two cases presented with painless infarct both were found to be diabetic. Convulsion was present in only one case of complete heart block. Such rare symptoms are to be kept in mind to avoid mistakes in diagnosis.

Table IV: Incidence Of The Anatomical Sites Of Myocardial Infarction.

Anatomical site of MI	No of cases (n)	Percentages (%)
Anterior wall	29	58
Inferior wall	19	38
Combined AW+IW	2	4

Anterior wall infarction (58%) was more common than inferior wall infarction (38%). In this study, combined wall infarction was observed in 4% of cases.

Table V: Incidence Of Various Complications In Relation To Anatomical Sites.

Complications	Anterior		Inferior		Anterior+Inferior		Total	
	n	%	n	%	n	%	n	%
Left ventricular dysfunction	7	24	1	5	2	100	10	20
Cardiogenic shock	5	17	0	0	2	100	7	14
Tachyarrhythmias	21	71	6	31	2	100	29	58
Bradyarrhthmias and conduction disturbances	1	3	6	31	0	0	7	14

Serious arrhythmias were more common in anterior wall infarction. Tachyarrhythmias were common in anterior wall infarction and Brady arrhythmias were common in inferior wall infarction. Cause of bradyarrhythmias is probably excessive vagal tone. This has to be kept in mind in treatment of bradyarrhythmias and hence particularly with ectopic beats with bradyarrhythmias, atropine will be the right choice of drug.

Table VI: Incidence Of Arrhythmias In Relation To Site Of Infarction.

Site	Total no. of cases (n)	Cases with arrhythmias (n)	Percentage (%)
Anterior wall infarction	29	20	70
Inferior wall infarction	19	12	63
Combined infarction	2	2	100

Incidence of arrhythmias was 70% in anterior wall and 63% in pure inferior wall infarction.

Other than these, 14 cases of anterior wall infarction had sinus tachycardia whereas 6 cases of inferior wall infarction had sinus bradycardia.

Table VII: Incidence Of Arrhythmias In Relation To Time.

Time	Cases Incidence (n)	Incidence (%)
1st hour	17	49
1 to 6 hours	8	23
6 to 24 hours	7	20
>24 hours	3	8

Around 50 % arrhythmias were in 1st hour of infarction.

Table VIII: Incidence Of Various Arrhythmias In 50 Cases Of Acute Infarction.

Types of arrhythmias	No of cases (n)	%	No of deaths (n)	%
Isolated				
Ventricular Premature Contraction	17	34	2	20
2nd degree AV block	6	12	-	-
1st degree AV block	4	8	-	-
Ventricular tachycardia	4	8	2	50
Left anterior hemiblock	2	4	1	50
Right bundle branch block	3	6	3	100
Atrial Fibrillation	2	4	-	-
Complete AV block	2	4	1	50
Supraventricular tachycardia	1	2	-	-
Atrial premature contraction	1	2	-	-
Left bundle branch block	2	4	1	50
Left posterior hemiblock	-	-	-	-
Combined				
Accelerated idioventricular rhythm +ventricular premature complex	15	30	-	-
Ventricular Premature contraction + Ventricular tachycardia	3	6	2	66
Bifascicular block	5	10	2	40
Right bundle branch block + Left anterior hemiblock	2	4	2	100
1st and 2nd degree atrioventricular block	2	4	-	-
Supraventricular premature contractions + atrial fibrillation	1	2	-	-

Most common arrhythmia was VPCs (34%). Next to VPCs, second degree AV block was observed in 12%, 1st and 2nd degree AV block and in combination with other arrhythmias in 4% of cases. Bifascicular block was observed in 10% of cases. First degree AV block in 8%, second degree AV block in 12%, first and second degree AV block combined 4% cases were observed. Supraventricular tachyarrhythmias were observed in only 6% of the cases. AF in 4% and supraventricular premature contraction was observed in 2% of cases, ventricular tachycardia was observed in 8% of cases, RBBB in 6% and LAHB in 8% of cases.

Table - Ix: Incidence Of Arrhythmias In Anterior Wall Infarction.

Types of arrhythmias	No of cases (n)	%	No of deaths (n)	%
Isolated				
Ventricular Premature Contraction	13	26	1	8
Ventricular tachycardia	4	8	2	50
Left anterior hemiblock	2	6	1	50

Right bundle branch block	3	10	3	100
Complete AV block	1	3	1	100
Supraventricular tachycardia	1	3	-	-
Atrial premature contraction	-	-	-	-
Combined				
Accelerated idioventricular rhythm +ventricular premature complex	9	28	-	-
Ventricular Premature contraction + Ventricular tachycardia	2	6	1	50
Bifascicular block	3	9	2	66
Right bundle branch block + Left anterior hemiblock	2	4	2	100
Supraventricular premature contractions + atrial fibrillation	1	3	-	-

Incidence of arrhythmia in anterior wall myocardial infarction was 70%. Among them, ventricular premature, contraction, second most common are left anterior hemi block and bifascicular block. These conduction distribution are very important in anterior wall infarction. If they are recognized early and treated with temporary transvenous right ventricular demand pacing, mortality and morbidity can be reduced significantly. In anterior wall infarction complete heart block was observed in only one case with mortality in spite of all efforts.

Table – X: Incidence Of Arrhythmias In Inferior Wall Infarction.

Types of arrhythmias	No of cases (n)	%	No of deaths (n)	%
Isolated				
Ventricular Premature Contraction	3	16	-	-
2nd degree AV block	6	32	-	-
1st degree AV block	3	16	-	-
Atrial Fibrillation	2	11	-	-
Complete AV block	1	5	-	-
Supraventricular tachycardia	1	2	-	-
Atrial premature contraction	1	2	-	-
Left bundle branch block	2	4	1	50
Left posterior hemiblock	-	-	-	-
Combined				
VPC+ Idioventricular rhythm	4	21	-	-
1st and 2nd degree atrioventricular block	2	6	-	-
Atrial premature contractions + atrial fibrillation	1	5	-	-
Sinus bradycardia + 1st degree AV block	1	5	-	-

Incidence of arrhythmias in inferior wall infarction was 63%. Most common were ventricular premature contraction, 2nd degree AV block and 1st degree heart block. Most common combined arrhythmias observed was bifascicular block (6%) in the form of 1st and 2nd degree AV block. Various conduction disturbances were more common in inferior wall infarction mostly transient and responded well to the treatment.

Table – Xi: Incidence Of Arrhythmias In Combined Anterior And Inferior Wall Infarction.

Types of arrhythmias	No of cases (n)	%	No of deaths (n)	%
Ventricular premature contractions + accelerated idioventricular rhythm	2	4	2	100
Ventricular tachycardia	2	4	2	100
Ventricular premature contractions + Ventricular tachycardia	2	4	2	100
Right bundle branch block	1	2	1	100

All cases of combined anterior and inferior wall infarction developed above mentioned arrhythmias, though treated promptly, mortality was there.

Table – Xii: Time Relation To Mortality After Admission.

Time of death	No of cases (n)	Percentage (%)
0 – 6 hours	3	38
6 – 24 hours	2	25
24 – 48 hours	1	12
48 hours to 1st week	1	12
During 2nd week	1	12

Total mortality was 8 (16%) of cases with highest mortality was found within first 6 hours (38%).

Table – Xiii: Antiarrhythmic Therapy In Various Arrhythmias In Post Myocardial Infarction.

	Beta blocker	Adenosine	Amioda-rone	Digo-xin	DC sho-ck	Atropine, Isopre-naline	Tempo-rary pacing
VPCs	11	-	-	-	-	-	-
VT	-	-	4	-	2	-	-
SVT	-	1	-	-	1	-	-
VF	-	-	-	-	1	-	-
AF	2	-	-	1	-	-	-
CHB	-	-	-	-	-	2	2
RBBB+ LAHB	-	-	-	-	-	-	2

Table – Xiv: Incidence Of Temporary Pacing In Various Bradyarrhythmias And Conduction Disturbances.

Arrhythmias (nature)	No of cases (n)	No of patients died (n)
Bifascicular block	4	3
Complete heart block	1	0
1st and 2nd degree AV block	4	0

Conduction distribution with anterior infraction were not responded to pacing whereas cases with inferior infraction and conduction responded well.

Table – Xv: Mortality According To Age

Highest Mortality was found in 6th decade.

In this study, 50 patients with acute myocardial infarction admitted in I.C.U. were studied with particular emphasis on distribution pattern, frequency and outcome of various arrhythmias and their response to therapy. Arrhythmias along with pump failure are the two most important factors for patients' mortality and morbidity after acute myocardial infarction.

Various arrhythmias are due to abnormal electrical activity or failure of electrical conduction subsequent to ischemia or necrosis of myocardium. The abnormal electrical activities and ischemia are transient in nature in most of the cases and if they can be diagnosed and controlled in time, patients can be saved. In comparison to that pump failure is due to necrosis or ischemia of significant amount of pumping myocardium that can hardly be salvaged.

A reduction in mortality rate of patients with acute myocardial infarction is directly achieved by the improvement in management of cardiac arrhythmias while mortality rate (about 80 percent) from cardiogenic shock seems to be unchanged even with the use of modern equipment and new drugs.

This study shows that arrhythmias are common indeed after acute myocardial infarction. Out of 50 consecutive patients studied at ICCU in a sense all had arrhythmias. Of course asymptomatic sinus tachycardia and occasionally sinus bradycardia are anticipatory in acute infarction. If they are excluded, 35 patients out of 50 had significant arrhythmias.

Table – Xvi: Incidence Of Arrhythmias In Acute Infarction By Various Authors.

Study	Incidence(%)
Patil P R et al	78
Nagabhushan int J adv med	89
Toshniwal et al	72
Present study	70

Table – Xvii: Age Wise Incidence Of Acute Myocardial Infarction By Various Studies.

Age (years)	No of cases (n)	No. of death (n)
Up to 30	1	-
31-40	2	-
41-50	11	-
51-60	22	4
61-70	13	4
70 above	1	-

Study	Decade showing maximum incidence
Patil P R et al	Sixth
Nagabhushan et al	Sixth
Rajhans R et al	Sixth
Present study	Sixth

Maximum incidence was found in sixth decade, consistent with those of others.

Table – Xviii: Gender Distribution Of Acute Infarction By Various Studies.

Study	Male: Female ratio
Mhatre MA et al	4 : 1
Patil P R et al	3.5 : 1
Nagabhushan et al	4.2 : 1
Present study	4.5 : 1

The incidences in males and females was 82% and 18% respectively with the ratio 4.5: 1. The significant difference in incidence of infarction in male and female may be due to factors like protective effect of estrogen, diet, smoking habit and stress.

Table – Xix: Anatomical Site Of Myocardial Infarction.

Study	Anterior (%)	Inferior (%)	Anterior+inferior (%)
Patil P R et al	61	35	5
Nagabhushan et al	66	30	3
Mhatre MA et al	60	38	2
Present study	58	38	4

In this study, anterior wall infarction was observed in 58% of cases, inferior wall infarction in 38% and combined in 4% of cases, which were consistent with results of other workers.

Table – Xx: Incidence Of Pre-mature Beats Afteracute Myocardial Infraction.

Study	VPC %	APC %
Patil P R et al	30	2
Framingham heart study	33	3
Present study	34	1

The more important clinical significance is that ventricular pre-mature contraction may predispose to ventricular tachycardia, flutter or fibrillation. Two patients in present series developed VT following pre-mature ventricular contractions.

Table Xxi: Incidence Of Super-ventricular Tachycardias By Various Studies.

Study	Incidence %
Rajhans R et al	2
Mhatre MA et al	3
Nagabhushan et al	4
Present study	2

In this study a case of SVT was observed which reverted to sinus rhythm after giving adenosine.

Table-xxii: Incidence Of Atrial Fibrillation By Various Studies.

Study	Percentage
Rajhans RA et al	6
Toshniwal et al	4.25
Mhatre MA et al	2
Present study	4

Results of present study with respect to atrial fibrillation was consistent with findings other workers. Atrial fibrillation may occur transiently and converted to sinus rhythm spontaneously. However if it persists digitalis is the treatment of choice.

Ventricular Tachycardia:
In present study ventricular tachycardia was observed in 8% of cases two of them died who were having extensive anterior infarction alone or both walls involved.

Table Xxiii: Incidence Of Ventricular Tachycardia.

Study	Percentage (%)
Rajhans R et al	8
Toshniwal et al	6.2
Present study	8

Table Xxiv: Incidence Of First And Second Degree Av Block By Various Studies.

Study	1st degree AV block(%)	2nd degree AV block (%)
Mhatre MA et al	9	10
Nagabhushan et al	8	10
Toshniwal et al	4.25	6
Present study	8	12

In this study first degree and second degree AV block were observed with acute inferior wall infarction. Rhythm converted to normal sinus rhythm because of spontaneous conversion. Two patients of first degree block converted to second degree AV block and again reverted to sinus rhythm. No one developed mobitz type-II second degree AV block.

Table Xxv: Incidence Of Bundle Branch Block By Various Studies.

Study	BBB Incidence %
Rajhans R et al	14
Toshniwal et al	12
Mhatre MA et al	22
Present study	24

Mortality was high in this study of cases having bundle branch block hence it significant influences.

Summary And Conclusion
In the present study, an analysis of 50 cases of serially admitted patients having acute infarction was carried out with object to find out the incidence of significant arrhythmias and its management in post MI period.
1. Myocardial infarction was most common in sixth decade, (44%). Male: Female ratio was 4.5: 1.
2. Chest pain (96%), dyspnea (32%), vomiting (52%), and perspiration (50%) were common presenting symptoms. Few patients presented infarction (4%), palpitation (14%), and convulsion (2%). This should be kept in mind to avoid mistake in diagnosis.
3. Anterior wall infarction was more common (58%) than inferior wall infarction (38%) and combined anterior and inferior wall infarction (4%).
4. Significant arrhythmias (excluding asymptomatic sinus bradycardia and tachycardia) were observed in 70% of cases.
5. Incidence of arrhythmias with inferior wall infarction was 63% and with anterior wall infarction, it was 70%.
6. Most common arrhythmia observed were pre-mature beats (36%) and the most common pre-mature beat was ventricular premature beat (34%).
7. Tachyarrhythmia were more common in anterior wall infarction (65%) as compared to inferior wall infarction (33%). Bradyarrhythmias and conduction disturbances were more common in inferior wall infarction (44%) as compared to anterior wall infarction (18%).
8. Incidence of various Tachyarrthmias :-Ventricular tachycardia (8%), Atrial Fibrillation (4%), Supraventricular tachycardia (2%) were observed. Ventricular fibrillation was not observed.
9. Incidence of various bradyarrhythmias and conduction disturbances were complete heart block (4%), bilateral bundle branch block (8%), Right bundle branch block (6%), left anterior hemiblock (6%) observed.
10. Ventricular pre-mature contraction (34%), ventricular tachycardia

(8%), bilateral bundle branch block (10%) and complete heart block (4%) were more common with anterior wall infarction.

11. First degree heart block (8%), second degree AV block (wenckebanch– Mobitz Type – I) (12%), were more common with inferior wall infarction. They reverted to sinus rhythm spontaneously without any treatment.

12. Arrhythmias carrying very high mortality were complete heart block (50%), bilateral bundle branch block (66%) and right bundle branch block (100%).

13. Arrhythmias with anterior wall infarction carried bad prognosis while Arrhythmias with inferior wall infarction had good prognosis.

14. Amiodarone therapy was very much effective (80%) in ventricular tachyarrhythmias. Atrial Fibrillation responded well to Digoxin, and Beta Blockers.
For maintenance treatment of ventricular Tachyarrhythmias and Supraventricular Tachyarryhthmias Amiodarone, class 3 anti-Arrhythmics sodium channel blockers were given.

15. Direct current cardioversion was used in resistant cases of ventricular Tachyarrhythmias (3 cases).

16. Temporary transvenous right ventricular demand pacing via percutaneous Femoral vein was done in symptomatic complete heart block and Bifascicular bundle branch block. Six cases were subjected to pacing, Results obtained were very good with inferior wall infarction.

Thus it can be seen that various type of arrhythmias and conduction disturbances are commonly observed with acute myocardial infarction. Early detection and prompt management of such disturbances is needful in reducing the mortality.

Conflicts of interest: None

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