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MORTALITY OF ACUTE INFERIOR WALL MYOCARDIAL INFARCTION WITH AND WITHOUT ATRIOVENTRICULAR BLOCK

Abstract: *Objective:* *To determine mortality rate associated with inferior wall myocardial infarction with or without atrioventricular block.*

Design & duration: *This is a cohort study completed in duration of six months.*

Setting: *Study was conducted in Cardiology ward of Bahawal Victoria Hospital Bahawalpur*

Patients & methods: *Patients presenting to the study hospital with inferior wall myocardial infarction combined with or without atrioventricular block. Inclusion and exclusion criteria were made for selection of patients. Sample size calculated using WHO sample size calculator. Non-probability consecutive sampling technique was used. Level of significance was 5%. P-value less than 0.05 was considered statistically significant. Consent was taken from all cases for including their data in the study. Permission was also taken from ethical review board committee. Chi square test was applied. SPSS software version 20 was used for analyzing data. Results were calculated in the form of percentage, frequency, means and standard deviation.*

Results: *Total 160 cases were studied. They were divided into two groups. Patients with inferior wall MI having atrioventricular block as well were placed in group-A. Other patients with inferior wall MI without AV block were placed in group-B. Mean age was 53±7.8 years. There were 43.3% male and 57.6% female patients. Majority of cases (66.7%) were above 50 years of age. Mortality in group-A was 18.3% and in group-B 11.7%.*

Conclusion: *Inferior wall myocardial infarction complicated with atrio-ventricular block has high mortality rate as compared to MI without AV block.*

Key words: *Myocardial Infarction, Atrioventricular block, Mortality.*

Language: *English*

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Introduction

Decrease in blood flow in coronary arteries causes acute coronary syndrome. Despite advanced management and developed medical field still acute coronary syndrome is leading cause of mortality. Annually one million people die in Pakistan due to ACS. It is because of increasing prevalence of risk factors of ischemic heart disease. Thrombotic

occlusion of coronary arteries results in St-segment elevation in MI, which is main sign seen on ECG in such patients. Complications of MI are ischemia, arrhythmia and thromboembolic changes. Conduction defect in AV block along with MI is associated with high mortality rate. Usually observed conduction defects after MI are Atrioventricular nodal block of 1ˢᵗ, 2ⁿᵈ and 3ʳᵈ degree. Complete Av block complicates inferior wall MI in 11-15% cases. It occurs in conditions like atrial fibrillation, cardiogenic shock and ventricular infarction.Previously mortality of MI with Av block has not been studied. This study has been conducted to evaluate prognosis of MI with AV block. This will help in early recognition of disease and to treat it immediately, hence mortality rate can be reduced.

PATIENTS AND METHODS

This is a cohort study started in January and completed after six months in June 2020. Study was conducted in Cardiac department of Bahawal Victoria Hospital Bahawalpur. Patients presenting to the study hospital with inferior wall myocardial infarction combined with or without atrioventricular block. Inclusion and exclusion criteria were made for selection of patients. Sample size calculated using WHO sample size calculator. Non-probability consecutive sampling technique was used. Level of significance was 5%. P-value less than 0.05 was considered statistically significant. Consent was taken from all cases for including their data in the study. Permission was also taken from ethical review board committee. Chi square test was applied. SPSS software version 20 was used for analyzing data.

Results were calculated in the form of percentage, frequency, means and standard deviation.

Sampling Technique: Non-probability consecutive sampling

Inclusion Criteria

Age 20-70 years
Either sex
Patient presenting in 12 hours of signs symptoms
Inferior wall MI with AV block, and without AV block

Exclusion Criteria
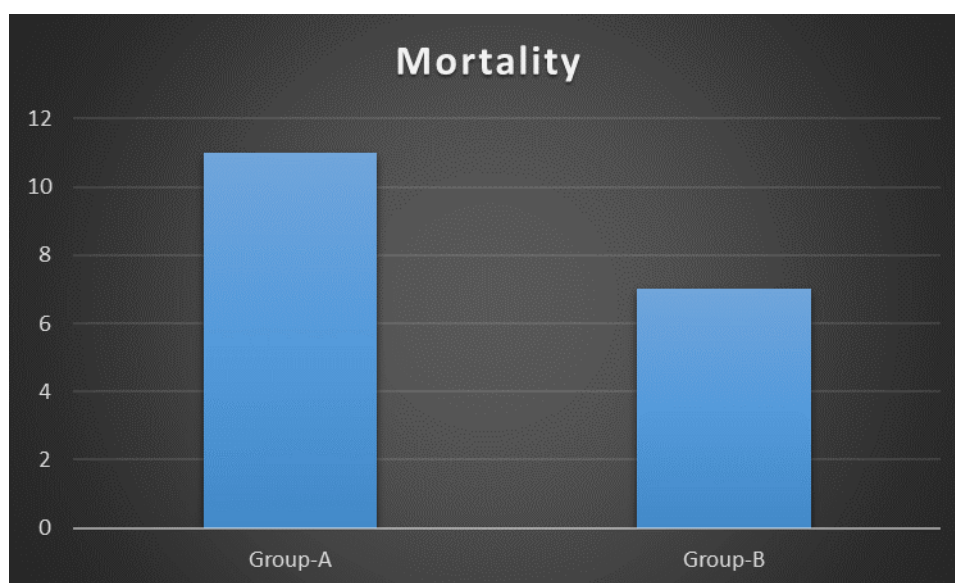
Clinical features of cardiogenic shock
Mechanical features of MI developing in patients like ventricular septal rupture, acute MR, and ventricular wall rupture.
Patients not thrombolysed
Patients with co-morbidities like renal failure or liver failure etc.

RESULTS

Total 160 cases were studied. They were divided into two groups. Patients with inferior wall MI having atrioventricular block as well were placed in group-A. Other patients with inferior wall MI without AV block were placed in group-B. Mean age was 53±7.8 years. There were 52(43.3%) male and 68(57.6%) female patients. Majority of cases 80(66.7%) were above 50 years of age. Mortality in group-A was 11(18.3%) and in group-B 7(11.7%). There were total 40 cases between 20-50 years of age including 22 in group-A and 18 from group-B. Out of 22 from group-A 5(22.7%) died and out of 18 from group-B 3(16.7%) died. Similarly 6(15.8%) out of 38(63.3%) cases from group-A and 4(9.5%) out 42(70%) cases from group-B died.

(Figure-1) Group wise distribution of mortality rate
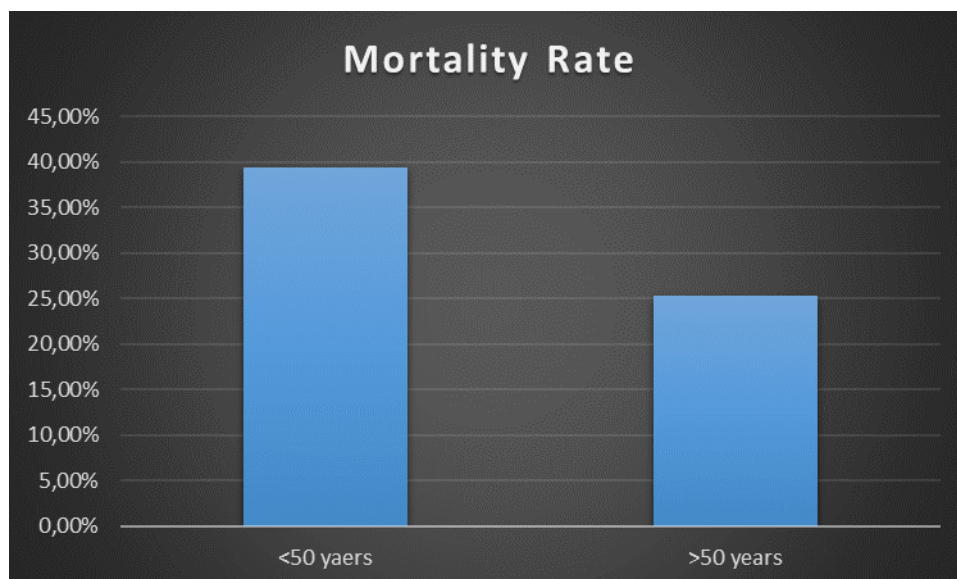
(Figure-2) Age wise distribution of mortality rate

(Table-1) Characteristics of patients in study group. (n=120)

Characteristics	Group-A (n=60)	Group-B (n=60)
Age	22(36.7%)	18(30%)
<50 years	38(63.3%)	42(70%)
>50 years		
Gender		
Male	28 (46.7%)	24(40%)
Female	32 (53.3%)	36(60%)
Mortality		
Yes	11(18.3%)	7(11.7%)
No	49(81.7%)	53(88.3%)

DISCUSSION

Now a day medical field has been much developed. Modern techniques and cardiac interventions have reduced mortality rate to much extent. PCI is now being practiced in developing countries as well, reducing complications related o MI. AV conduction block is a complication of MI. Mortality associated with AV after MI in hospital admitted patients in Pakistan has never been studied before. Purpose of this study is to determine mortality rate associated with MI and AV block. Total 160 cases were studied. They were divided into two groups. Patients with inferior wall MI having atrioventricular block as well were placed in group-A. Other patients with inferior wall MI without AV block were placed in group-B. Mean age was 53±7.8 years. There were 52(43.3%) male and 68(57.6%) female patients. Majority of cases 80(66.7%) were above 50 years of age. Mortality in group-A was 11(18.3%) and in

group-B 7(11.7%). There were total 40 cases between 20-50 years of age including 22 in group-A and 18 from group-B. This is a cohort study started in January and completed after six months in June 2020. Study was conducted in Cardiac department of Bahawal Victoria Hospital Bahawalpur. Patients presenting to the study hospital with inferior wall myocardial infarction combined with or without atrioventricular block. Inclusion and exclusion criteria were made for selection of patients. Sample size calculated using WHO sample size calculator. Non-probability consecutive sampling technique was used. Level of significance was 5%. P-value less than 0.05 were considered statistically significant. How AV block increases mortality rate has not been studied still. AV block are associated with large ischemic areas of heart resulting in heart failure and increasing mortality rate.

CONCLUSION

Inferior wall myocardial infarction complicated with atrio-ventricular block has high mortality rate as compared to MI without AV block. Early diagnosis and prompt treatment can prevent AV block and can reduce mortality rate.

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