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PERICARDIAL EFFUSION IN ACUTE MYOCARDIAL INFARCTION

Muhammad Umair Khan, Muhammad Umair Rafeeq, Rabia Tanveer
Mayo Hospital Lahore

Abstract:
Objective; *To determine the frequency of pericardial effusion in cases presenting with acute myocardial infarction.*
Methodology: *This cross sectional study was carried out at Department of Cardiology, Services Hospital, and Lahore during 01-07-2017 to 31-12-2017. In this study the cases of age more than 30 years, irrespective of gender having acute MI were included. the diagnosis of Acute MI was made on the basis of clinical symptoms of central chest pain lasting for > 30 minutes, radiating to left arm and jaw and with typical ECG changes (ST elevation/ ST depression/ T wave inversion) and raised troponin I level. Pericardial effusion was labelled on Echocardiography, done on 4th day of admission.*
Results: *In this study there were total 100 cases of AMI, with mean age of 51.33±10.34 years. The mean duration of AMI was 8.58±6.13 hours. There were 63 (63%) males and 37 (37%) females in this study. Pericardial effusion was seen in 20 (20%) of the cases. Pericardial effusion was seen in 18 (32.14%) of cases with AWMI as compared to 2 (4.55%) of cases with IWMI with significant p value of 0.001. There was no significant difference in terms of duration of AMI with p= 0.86.*
Conclusion; *Pericardial effusion is seen in every 5th case of AMI and it is significantly high in cases with AWMI.*
Key words*:AMI, AWMI, IWMI, Effusion.*

*** Corresponding author:**
Muhammad Umair Khan,
Mayo Hospital,
Lahore

QR code

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INTRODUCTION:

Acute coronary syndrome is one of the salient cardiovascular disease and is rated amongst the highest in terms of mortalities associated with cardiac diseases. It comprised angina pectoris and acute myocardial infarction (AMI) and this division relies upon the ECG changes and duration of symptoms along with raised cardiac enzymes [1].

Acute MI can be fatal as it can lead to diverse range of complications, few are mechanical and the others electrophysiological. The major complications after AMI include cardiac arrhythmias, valvular tendon rupture, septal perforations, left ventricular thrombi, pericardial effusions and even death [2,3].

Pericardial effusion is not uncommon and is defined as collection of fluid in the pericardial membrane. Small effusions are found frequently and may not need any drainage, but the larger ones can cause compression over the heart and may end up in temponade. The degree of symptoms largely depends upon speed and size of the fluid accumulation. Echocardiography is considered as the investigation of choice and drainage of this fluid is the ultimate therapeutic goal [4,5].

OBJECTIVE OF THE STUDY

To determine the frequency of pericardial effusion in cases presenting with acute myocardial infarction.

MATERIAL AND METHODS:

STUDY DESIGN

Cross Sectional study

SETTING

Department of Medicine, Services Hospital, Lahore

DURATION OF STUDY

01-07-2017 to 31-12-2017

SAMPLING TECHNIQUE

Non probability consecutive sampling

MATERIAL AND METHODS:

In this study the cases of age more than 30 years, irrespective of gender having acute MI were included. the diagnosis of Acute MI was made on the basis of clinical symptoms of central chest pain lasting for > 30 minutes, radiating to left arm and jaw and with typical ECG changes (ST elevation/ ST depression/ T wave inversion) and raised troponin I level. Pericardial effusion was labelled on Echocardiography, done on 4th day of admission.

Statistical analysis;

The data was analysed by using SPSS version-23. Post stratification Chi square test was applied taking p value <0.05 as significant.

RESULTS:

In this study there were total 100 cases of AMI, with mean age of 51.33±10.34 years. The mean duration of AMI was 8.58±6.13 hours (table 01). There were 63 (63%) males and 37 (37%) females in this study. Pericardial effusion was seen in 20 (20%) of the cases. Pericardial effusion was seen in 18 (32.14%) of cases with AWMI as compared to 2 (4.55%) of cases with IWMI with significant p value of 0.001 as in table 02. There was no significant difference in terms of duration of AMI with p= 0.86 (table 03).

Table No. 01. Study variables

Variables	Mean	Range
Age	51.33±10.34	30-76 years
Duration of AMI (hrs)	8.58±6.13	2-24 hours

Table No. 02. Pericardial effusion with respect to type of AMI

Type of AMI	Pericardial effusion		Total	p value
	Yes	No		
IWMI	02 (4.55%)	42 (95.45%)	44 (100%)	
AWMI	18 (32.14%)	38 (67.86%)	56 (100%)	0.001
Total	**20 (20%)**	**80 (80%)**	**100 (100%)**	

Table No 03. Pericardial effusion with respect to duration of AMI

Duration of AMI	Pericardial effusion		Total	p value
	Yes	No		
<5 Hours	6 (18.75%)	26 (81.25%)	32 (100%)	
5 hours or more	14 (20.58%)	54 (79.42%)	68 (100%)	0.86
Total	**20 (20%)**	**80 (80%)**	**100 (100%)**	

DISCUSSION:

Pericardial effusion is one of the fatal complication after acute myocardial infarctions. Small effusions are found due to underlying inflammation of the myocardium due ti MI, and can go un noticed. But in cases of severe inflammation or mechanical defect, the effusions can be large enough to compress the heart and impair its contractility and lead to death.

In this study, pericardial effusion was seen in 20 (20%) out od hundred cases of AMI. The findings of the present study were slightly lower as compared to the previous studies. According to a study by Ali et al, it was seen that pericardial effusion was found in 27% of the cases after AMI.[6] While Rehman et al, carried out the study with same protocol and it was seen that out of their 200 cases, pericardial effusion was seen in 32% of the cases.[7] Belkin R et al revealed very low results and it was seen that this effusions was seen in <10% of the cases.[8] The difference in these results can be due to difference in the time of presentation and the degree of aggressive management of cases of AMI.

Pericardial effusion was seen in 18 (32.14%) of cases with AWMI as compared to 2 (4.55%) of cases with IWMI with significant p value of 0.001. This was also supported by the data of the previous studies that the AWMI is significantly associated with pericardial effusion that the other MI types with p values of < 0.05.[9-10]

CONCLUSION:

Pericardial effusion is seen in every 5th case of AMI and it is significantly high in cases with AWMI. In this study there were total 100 cases of AMI, with mean age of 51.33±10.34 years. The mean duration of AMI was 8.58±6.13 hours. There were 63 (63%) males and 37 (37%) females in this study. Pericardial effusion was seen in 20 (20%) of the cases. Pericardial effusion was seen in 18 (32.14%) of cases with AWMI as compared to 2 (4.55%) of cases with IWMI with significant p value of 0.001. There was no significant difference in terms of duration of AMI with p= 0.86. Pericardial effusion is seen in every 5th case of AMI and it is significantly high in cases with AWMI.

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