

Research Article**Frequency of Pericardial Effusion (PE) in Cases Presenting with Acute MI.**

**¹Syed Muhammad Hassan, ²Aleem Hamza Bajwa
and ³Faryal Rehman**

¹House Officer Sheikh Zayed Hospital, Rahim Yar Khan

²Medical Officer, BHU Kot Karam Khan

³Woman Medical Officer, District Headquarter Hospital Lodhran

ABSTRACT:

Objective; Frequency of pericardial effusion (PE) in cases presenting with acute MI.

Methodology: This was a cross sectional study that was done at Department of Cardiology, Sheikh Zayed Hospital, RYK during February to November 2017 in which 100 cases of Acute MI of either gender with age range of 30 to 80 years were included. The cases with trauma, hypo albuminemia and any bleeding disorder were excluded. Pericardial effusion was labelled as yes where there was fluid accumulation seen around the heart of any volume on tran-thoracic echocardiography.

Results: Hundred cases of acute MI were selected in this study out of which 54 (54%) were males and the mean age was 51.57 ± 10.43 years. Pericardial effusion was observed in 18 (18%) of 100 cases of Acute MI. There were no significant differences in terms of gender and duration of Acute MI with p values of 0.87 and 0.97 respectively. Pericardial effusion was seen significantly high in cases suffering from acute AAMI where it was observed in 16 (22.22%) cases as compared to 2 (7.14%) of cases with p= 0.001.

Conclusion; Pericardial effusion seen is seen in almost every 5th case of acute MI and it is significantly high in cases that suffer AAMI.

Keywords. Acute MI, Pericardial effusion

INTRODUCTION

Ischemic heart disease is one of the high burden diseases prevalent worldwide and are considered among the deadliest causes along with the infectious diseases and trauma. Acute coronary syndrome is a subset of this entity and is defined as syndrome of chest pain and ischemic changes to the myocardium. It can be divided broadly into angina and acute myocardial infarction (AMI). This stratification is done on the basis of duration of chest pain, particular ST segment changes and raised cardiac enzymes. AMI can further be stratified into STEMI and NSTEMI depending upon the ST elevation in the former setting.¹ There are wide range of structural and functional complications associated with this. Along with the cardiac complications, extra cardiac complications are also found and they indirectly can affect the heart as well and among them embolization of

clot, shock and pericardial effusions are most commonly encountered.^{2,3}

Pericardial effusion (PE) is accumulation of fluid around the heart in pericardial membrane which can acutely compress on heart and lead to its failure and in cases of haemorrhage effusion in ruptured myocardium it can lead to tamponade and death as well. Hence it can be a life threatening emergency and relied largely upon the volume and rate of accumulation.^{4,5}

OBJECTIVE;

Frequency of pericardial effusion (PE) in cases presenting with acute MI.

MATERIAL AND METHODS

STUDY DESIGN: Cross sectional study

STUDY SETTING: Department of Cardiology, Sheikh Zayed Hospital, RYK.

DURATION OF STUDY

February 2017 to November 2017

SAMPLING TECHNIQUE

Non probability consecutive sampling

Inclusion criterial;

Both gender

Age 30-80 years

Acute MI presenting within 24 hours

Exclusion criteria

Trauma

Bleeding disorders

Hypo albuminemia

Pericardial effusion was labelled as yes where there was fluid accumulation seen around the heart of any volume on tran-thoracic echocardiography.

The data was entered and assessed by SPSS version 22. Chi square test was applied to see for significance and p value < 0.05 was taken as significant.

RESULTS;

Hundred cases of acute MI were selected in this study out of which 54 (54%) were males and the mean age was 51.57±10.43 years. Pericardial effusion was observed in 18 (18%) of 100 cases of Acute MI as shown in figure 01. There were no significant differences in terms of gender and duration of Acute MI as shown in table 01 and 02 it p values of 0.87 and 0.97 respectively. Pericardial effusion was seen significantly high in cases suffering from acute AWMi where it was observed in 16 (22.22%) cases as compared to 2 (7.14%) of cases with p= 0.001 as displayed in table 03

STATISTICAL ANALYSIS;

Figure NO. 1. Frequency of pericardial effusion

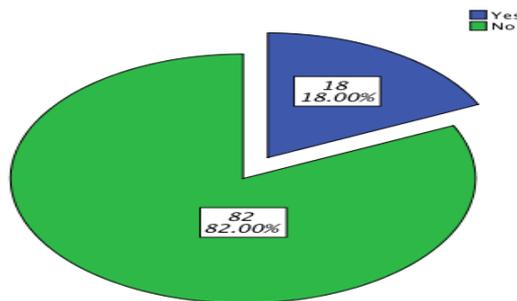


Table No 01. Pericardial effusion (PE) and gender

Gender	Pericardial effusion		Total	p value
	Yes	No		
Male	09 (16.67%)	45 (83.33%)	54 (100%)	0.87
Female	09 (19.57%)	37 (80.43%)	46 (100%)	
Total	18 (18%)	82 (82%)	100 (100%)	

Table 02. Pericardial effusion (PE) and duration of AMI

Duration of AMI	Pericardial effusion		Total	p value
	Yes	No		
< 12 hour	06 (17.64%)	28 (82.36%)	34 (100%)	0.97
12 or more hour	12 (18.18%)	54 (81.82%)	66 (100%)	
Total	18 (18%)	82 (82%)	100 (100%)	

Table 03. Pericardial effusion (PE) and sub-type of AMI

Sub-type of AMI	Pericardial effusion		Total	p value
	Yes	No		
IWMI	02 (7.14%)	26 (92.86%)	28 (100%)	0.001
AWMI	16 (22.22%)	56 (77.78%)	72 (100%)	
Total	18 (18%)	82 (82%)	100 (100%)	

DISCUSSION;

Myocardial infarction can be fatal not only directly due to heart failure; but also due to various other non cardiac complications like pericardial effusion. The accumulation of the fluid at rapid pace and large in volume can compress the heart and lead to its failure and death and hence its early diagnosis and management is mandatory to reduce such morbidity and mortality.

In this study out of 100 cases of acute MI, pericardial effusion was seen in 18 (18%) of the cases. The results of this study revealed slightly less presentation as compared to the previous studies. Hafeez et al carried a study on cases of acute MI, and it was seen that out of their 200 cases, PE was seen in 64 (32%) cases.⁶ Similar finding was observed by Ali et al where this finding of PE was seen in 27% of cases.⁷ In contrast to these above mentioned studies, the study done by Belkin et al revealed that 8% of cases presenting with AMI developed pericardial effusion.⁸ The difference in these cases can be explained by the difference in inclusion criteria; difference in severity and also the difference in the management plan of such cases.

Pericardial effusion was seen significantly high in cases suffering from acute AWTMI where it was observed in 16 (22.22%) cases as compared to 2 (7.14%) of cases with p= 0.001. The data was variable in previous studies and some has shown significant and the others non significant results regarding the type of MI for development of pericardial effusion. But one thing was consistent that pericardial effusion was seen more in cases with AWTMI as compared to IWTMI.⁹⁻¹¹

CONCLUSION;

Pericardial effusion seen is seen in almost every 5th case of acute MI and it is significantly high in cases that suffer AWTMI.

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