IN HOSPITAL OUTCOMES IN CASES AFTER ACUTE CORONARY SYNDROME.

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Abstract:
Objective: To determine the frequency of various in hospital outcomes in cases after acute coronary syndrome.
Methodology: This was a descriptive case series conducted at Mayo hospital & Sir Ganga Ram Hospital, Lahore and Aziz Bhatti Shaheed Teaching Hospital, Gujrat during January 2019 to June 2019. In the present study the cases with age range of 30 to 60 years of either gender presenting with ACS were included. ACS was labelled with the history of chest pain and ECG changes i.e. ST segment elevation depression or t wave inversion. The cases were followed to look for in hospital outcomes.
Results: In the present study there were total 100 cases of acute coronary syndrome out of which 58 (58%) were males and 42 (42%) were females. The mean age was 55.34±9.12 years and mean duration of ACS was 17.34±4.13 hours. Different outcomes in the form of abnormality was seen in 49 (49%) of cases with few overlapping in some cases. The most common outcome was arrhythmia seen in 43 (43%) of the cases. It was followed by heart failure seen in 16 (16%) of cases. Cardiogenic shock was seen in 12 (12%) of cases, while mortality was seen in 5 (5%) followed by recurrent infarction in 3 (3%) of cases.
Conclusion: Acute coronary syndrome can result in various outcomes and the arrhythmias is the most commonly observed among them.
Key words: *ACS, Arrhythmias, Shock, Mortality*

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INTRODUCTION:

Chest pain covers a wide variety of underlying causes and is amongst the most prevalent symptoms presenting to emergency and cardiac departments. According to a survey more than 6 million cases present with this complaint. [1] Acute coronary syndrome is one of the fatal clinical scenario that can present with chest pain and comprises acute myocardial infarction (MI) and angina pectoris. Myocardial infarction can be divided into STEMI and NSTEMI. Cardiac enzymes are the differentiating marker between myocardial infarction and angina pectoris along with Electrocardiographic (ECG) changes. [2-3]

There are multiple risk factors that can predispose to MI and included smoking, Diabetes Mellitus (DM), hypertension (HTN), dyslipidemia and family history of ischemic heart disease. Acute coronary syndrome can result in various complications. These include arrhythmias, heart blocks, cardiac arrest, hypotension, cardiac rupture, mechanical defects, respiratory failure, recurrent infarcts and mortality etc. [4-6]

According to a study by Kunadian V et al compared in hospital outcomes in anaemic versus non anaemic cases and revealed the cases with ACS had significantly higher rates of in hospital complications especially in those that had anemia as compared to those who were non-anemic comprising ischemia in 6.6%, major bleeding in 7.3% and increased likelihood of mortality. While Greenberg G assessed the complications at 1 month and revealed that reinfarction was seen in 7.7%, and mortality in 7.3% of anemic cases. [7-8] According to a study done by Sulaiman K et al, the in hospital complications in anemic cases were seen as congestive heart failure in 20%, recurrent ischemia 20%, cardiogenic shock 9.4%, and in hospital mortality of 8.17% in their study. [9]

OBJECTIVE:

To determine the frequency of in-hospital outcomes in cases after acute coronary syndrome.

MATERIALS AND METHODS:

Study settings;
Descriptive case series study.

Study place;
Mayo hospital & Sir Ganga Ram Hospital, Lahore and Aziz Bhatti Shaheed Teaching Hospital, Gujrat

Study duration;
January 2019 to June 2019

Sampling technique;
Non probability consecutive sampling

IN HOSPITAL OUTCOMES:

1. **Cardiogenic shock:** It was labeled yes when the systolic BP was less than 90 mmHg without inotropic support.
2. **Heart failure;** It was labeled as yes when the ejection fraction is less than 40% assessed on transthoracic echocardiography.
3. **Recurrent infarction;** It was labeled as yes when there were new ECG changes (any of the change as above in ACS i.e. ST segment elevation, depression or T wave inversion, which was not previously present on admission with ACS along with CKMB more than 200 U/L.
4. **Mortality;** It was labeled as yes when the patient died within 7 days in hospital admission and shows no signs of life assessed by absence of spontaneous respiratory, cardiac activity and no corneal and conjunctival reflex (assessed clinically) when admitted for ACS.
5. **Arrhythmia;** It will be labelled as yes where there is irregularity in the p wave or QRS complex.

In the present study the cases with age range of 30 to 60 years of either gender presenting with ACS were included. ACS was labelled with the history of chest pain and ECG changes i.e. ST segment elevation depression or t wave inversion. The cases were followed to look for in hospital outcomes as per operational definition.

Statistical analysis: The data was analyzed with the help of SPSS version 22. The quantitative variables were observed in mean and standard deviation while qualitative variables as frequencies and percentages.

RESULTS:

In the present study there were total 100 cases of acute coronary syndrome out of which 58 (58%) were males and 42 (42%) were females. The mean age was 55.34±9.12 years and mean duration of ACS was 17.34±4.13 hours (table 1). Different outcomes in the form of abnormality was seen in 49 (49%) of cases with few overlapping in some cases. The most common outcome was arrhythmia seen in 43 (43%) of the cases. It was followed by heart failure seen in 16 (16%) of cases. Cardiogenic shock was seen in 12 (12%) of cases, while mortality was seen in 5 (5%) followed by recurrent infarction in 3 (3%) of cases as in table 2.

Table 01. Study variables

	Mean	Range
Age	55.34±9.12	30-70 years
BMI	31.45±4.19	24-42
Duration of ACS	17.34±4.13	2-24 hours

Table 02. In hospital outcomes

Outcomes	N	%
Cardiogenic shock	12	12%
Heart failure	16	16%
Recurrent infarction	3	3%
Mortality	5	5%
Arrhythmia	43	43%

DISCUSSION:

Acute coronary syndrome is a fatal cardiac disease that can results in various complications that can be dreadful. The major risk factors include smoking, DM, HTN, dyslipidemia and family history of ischemic heart disease. In hospital majority of these complications are observed especially within first 24 hours.

In the present study different abnormal outcomes were seen in almost half of the cases. Arrhythmia were seen in 43 (43%) of the cases. This was also seen by many studies that the arrhythmias are the most common complications observed in cases after ACS and the risk was highest in cases within 24 hours of admission. According to a study done by Maggioni AP et al Arrhythmias were seen in high number of cases and amongst them premature ventricular contractions (PVCs) was the most commonly observed. [10] The reason of highest number with this can be explained by the factor that after acute ischemia the cell are damaged and are more vulnerable to electrical current generation as every cardiac cell has in it as its innate property.

It was followed by heart failure seen in 16 (16%) of cases and cardiogenic shock in 12 (12%) of cases. This was also seen in previous studies that the pulmonary oedema, assessed by shortness of breath was one of the major symptoms detected and seen in high number of cases. [11-12] According to a study done by Sulaiman K et al cardiogenic shock was seen in 9.4% of the cases. [9] The mortality was observed in 5 (5%) of the cases in this study and it was also seen in less than 10% of the cases carried out at other centres. [13-14] The reason of lower number of cases with mortality can be explained by the factors of improved health care system, better and early management.

CONCLUSION:

Acute coronary syndrome can result in various outcomes and the arrhythmias is the most commonly observed among them.

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