

PRESENTATION AND OUTCOME OF PATIENTS PRESENTING WITH ACUTE CORONARY SYNDROME IN A RURAL HOSPITAL- A RETROSPECTIVE RECORD BASED STUDY

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Abstract

Background-Acute coronary syndrome (ACS) remains one of the leading causes of mortality worldwide. The prevalence of Coronary artery disease and the incidence of ACS are very high among Indians.

Objectives-The primary aim of this study was to assess the varying clinical presentation of patients with ACS and to determine the effectiveness of various treatment modalities establish an association between base line variable and ACS presentation.

Methods-A retrospective descriptive study was conducted in Department of Medicine (Cardiology) in MGM Muthoot Hospital, Kozhencherry for the period of One year. Medical records of patients admitted with ACS during the period of study. A total of 100 patients admitted with ACS through Non probability convenience sampling technique.

Results-There is significant association between outcome and Type-II diabetes mellitus. Since the p value is 0.048 is less than 0.05, there is significant association between outcome and Hypertension. Since the p value is 0.528 is greater than 0.05, there is no significant association between outcome and Dyslipidemia but no association with demographic profile. 2 the association between treatment modality and outcome is highly significant ($p < 0.05$). PTCA was found to be most common treatment modalities done in more than 90% of patients.

Conclusion-The study reveals that from the Chi-square test analysis, it is found that there is no significant association between outcome and base line variables. But the significant association has been obtained between complications, Treatment modalities and outcome since the 'p' value is 0.000. Furthermore, studies with large sample size must be conducted for better accuracy of results with longer duration.

Keywords- Acute coronary syndrome, Myocardial infarction, Coronary artery bypass grafting, cardiogenic shock, PTCA, cardiac biomarkers.

Introduction-

Coronary artery disease (CAD) is the leading cause of mortality and morbidity in the world. Acute coronary syndromes (ACS), comprising of unstable angina (UA), non-ST-segment elevation myocardial infarction (NSTEMI) and ST-segment elevation myocardial infarction (STEMI), are the commonest causes of mortality in patients with Coronary artery disease.[1,2] The mortality related to ACS has significantly reduced in the developed world over the past 20 years. But the mortality remains high among Indians. CAD occurs in Indians 5–10 years earlier than in other populations around the world and the major effect of this peculiar phenomenon is on the productive workforce of the country aged 35–65 years.[3,4]The prevalence of CAD and the incidence of ACS also are very high among Indians. India has the highest burden of ACS in the world.[5] The rising incidence of ACS in Indians may be related to the changes in the lifestyle, the westernization of the food practices, the increasing prevalence of diabetes mellitus and probably genetic factors. Appropriate management of this disease will lead to a reduced incidence of mortality and morbidity.[6] A quick but thorough assessment of the patients history and findings on physical examination, electrocardiography, radiologic studies and cardiac biomarker tests permit accurate diagnosis and aid in early risk stratification, which is essential for guiding treatment.[7] Indian patients with acute coronary syndrome have higher morbidity and mortality than in high income countries. Availability, accessibility, affordability are the main challenges facing the healthcare system in India.

Materials and Methods-

A retrospective descriptive study was conducted in Department of Medicine (Cardiology) in MGM Muthoot Hospital, Kozhencherry for the period of One year. Medical records of patients admitted with ACS during the period of study. A total of 100 patients admitted with ACS through Non probability convenience sampling technique.

Inclusion criteria- Patients with Acute Coronary Syndrome.

Exclusion Criteria- Patients with multi system involvements,

- Recent CVA.
- CLD.
- Recent intracranial bleed.
- Recent major surgery.

Statistical Analysis

To analyze the mode of presentation of ACS using frequency tables and bar diagrams and analysing outcome occurring in the four age groups (less than 30, 31 to 50, 51 to 70 and above 70) by using one way ANOVA.To examine the association between baseline variables using Chi square test.The Software using is SPSS (Statistical package for social sciences).Prior to commencement study has been approved from Institutional Ethical Committee.

Results-**Table 1- Association between Outcomes of ACS with Demographic profile, Comorbidities.**

Outcomes	Sex (male)	Age (51-70)	Diabetes (yes)	HTN(yes)	Dyslipidemia (no)	Smoking (yes)
Death	2	3	1	3	3	1
On follow up	59	56	45	41	74	27
Recurrence of MI	2	2	0	1	2	0
Referred for CABG	2	1	2	2	1	0
p-value	0.773	0.504	0.04*	0.04*	0.528	0.55

As per table the study was male preponderance (65%). Since the p value is 0.773 which is greater than 0.05, there is no significant association between outcome and sex. Since the p value 0.504 is greater than 0.05, there is no significant association between outcome and age group. Since the p value 0.045 is less than 0.05, there is significant association between outcome and Type-II diabetes mellitus. Since the p value is 0.048 is less than 0.05, there is significant association between outcome and Hypertension. Since the p value is 0.528 is greater than 0.05, there is no significant association between outcome and Dyslipidemia. Mean age in the study was 63.19 years. Considering the case of base line variables such as chest pain, vomiting, Hypotension and diaphoresis, 91% of the patients have chest pain, 5% of the patients have vomiting, 33% of the patients have diaphoresis and 19% of the patients have Hypotension at the time of presentation.

Table 2- Association between Outcomes and Treatment modalities

Outcomes	Treatment modalities			p-value
	CABG	MED MNGT	PTCA	
Death	0	0	3	0.001*
On follow up	0	12	80	
Recurrence of MI	0	0	3	
Referred for CABG	2	0	0	

As per table 2 the association between treatment modality and outcome is highly significant ($p < 0.05$). PTCA was found to be most common treatment modalities done in more than 90% of patients.

Table 3- Association between Outcomes and Complication

Outcomes	Complication			p-value
	Cardiogenic shock	Death	No	
Death	2	1	0	0.001*
On follow up	5	0	87	
Recurrence of MI	0	0	3	
Referred for CABG	0	0	2	

As per table 3 the association was found to be significant ($p < 0.05$). 92% patients had no complication and there were no deaths. 2 patients had cardiogenic shock and one death.

Discussion-

Out of the 100 patients selected for this study 65% were males and remaining 35% were females and majority of the patients belongs to 51-70 years of age group. Considering the co morbidities like Type-II diabetes mellitus, Hypertension, Dyslipidemia, and for none of the co morbidities, 48% having Type-II diabetes mellitus, 47% having Hypertension, 20% of the patients have Dyslipidemia and 8% of the patients have none of the co morbidities. Then considering the case of smoking 28% have the habit of smoking. In the case of previous history of the selected patients for this study, 7% have the history of occurrence of ACS. The results of the study were similar to several other retrospective studies.[8,9,10,11]

In the case of treatment modalities 2% of the patients were referred for CABG, 12% were referred for medical management, and the remaining 86% were referred for PTCA. Then considering complication, 7% of the patients went to cardiogenic shock and 1% went to death.

In this study tested the association between outcome and co morbidities (Type-II diabetes mellitus, Hypertension, Dyslipidemia, and for none of the co morbidities), outcome and smoking, outcome and previous history, outcome and baseline variables (chest pain, vomiting, Hypotension and diaphoresis), outcome and treatment modalities, outcome and complication using chi-square test method. The outcome defined for study is death, on follow up, recurrence of M.I, referred for CABG. The observation and findings of the chi-square test is as follows.

By testing the association between gender and outcome the chi-square value is 1.115 with 3 degree of freedom and the 'p' value is 0.773, which is greater than 0.05, there is no significant association between outcome and sex. Considering the association between age group and outcome the chi-square value is 5.312 with 6 degree of freedom and the 'p' value is 0.504, there is no significant association between outcome and age group. Which was similar to few studies.[12,13,14]

In the case of Type-II diabetes mellitus, tested the association between Type-II diabetes mellitus and outcome the chi-square value is 5.225 with 3 degree of freedom and the 'p' value is 0.045, there is significant association between outcome and Type-II diabetes mellitus. Considering the association between outcome and Hypertension, the chi-square value is 6.082 with 3 degree of freedom and the 'p' value is 0.048, there is significant association between outcome and

Hypertension. Considering the association between outcome and smoking the chi –square value is 2.070 with 3 degree of freedom and the ‘p’ value is 0.558, there is no significant association between outcome and smoking.[15,16] Tested the association between outcome and treatment modalities the chi-square value is 100.910 with 6 degree of freedom and the ‘p’ value 0.000, which is less than 0.05, the association between outcome and treatment modalities are highly significant. Considering the association between outcome and complication the chi-square value is 51.124 with 6 degree of freedom and the ‘p’value 0.000, which is less than 0.05, the association between outcome and complication is highly significant. These results has slight similarity with few studies.[17,18,19]

Conclusion-

In this study, the association between baseline variables and outcome, presentation and outcome, Treatment modalities and outcome & Complication and outcome was studied in a sample size of 100 patients. The study reveals that from the Chi-square test analysis it is found that there is no significant association between outcome and base line variables. But there is significant association has been obtained between complication and outcome, & Treatment modalities and outcome since the ‘p’ value is 0.000. Further more studies with large sample size must be conducted for better accuracy of results with longer period of time.

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Conflict of Interest- None declared

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