

**ANALYTICAL CROSS SECTIONAL STUDY OF PATIENTS OF ACUTE CORONARY SYNDROME WITH DIABETES AND WITHOUT DIABETES****Cardiology****Dr. Chhagan Ramteke**

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KEYWORDS**INTRODUCTION**

- Patients with type 2 diabetes mellitus have higher risk of cardiovascular events and death than those without diabetes.
- ACS occurs early in diabetics and is associated with increased mortality.
- 25-30% of patients admitted for ACS have diabetes.

AIM AND OBJECTIVE

To study the clinical profile of patients of acute coronary syndromes with diabetes and without diabetes.

OBJECTIVES

- To assess fasting plasma glucose in patients with acute coronary syndrome.
- To study baseline characteristics, symptomatology and delay in treatment compared between diabetics and non-diabetics.

MATERIAL AND METHODS**Study Site:**

Medicine and cardiac intensive care unit and wards in tertiary care hospital.

Study Type:

Analytical cross sectional study.

Study Population:

Patients diagnosed with ACS.

Study Duration:

2 months from May to July.

Sample Size: 50

This minimum sample size was based on hospital records and the following formula was used.

$$n = \frac{Z^2 P(1-P)}{d^2}$$

Where n is the sample size,

- Z is the statistic corresponding to level of confidence,
- P is expected prevalence
- d is precision
- Continuous variables were presented as mean $\pm$ SD or median (25th and 75th percentiles) and compared using student t tests or rank tests, as appropriate.
- Categorical variables were described using frequencies and compared using chi-square tests.

METHODOLOGY

- Data collection was done by interviewing the subjects by means of detailed history and examination.
- Patients were divided into diabetes group and non diabetes group by asking history, fasting BSL levels.
- Patients in these groups were matched for age, sex, biochemical markers, complications. comparative significant analysis in terms of p value was calculated by t test and chi square test

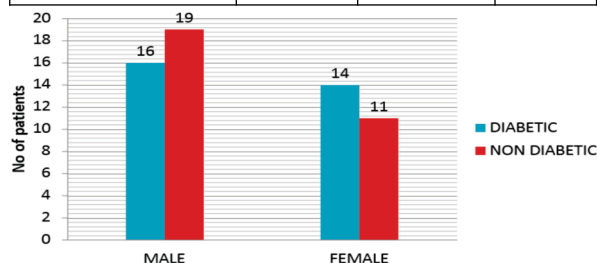
- Patients diagnosed with acute coronary syndrome as per fourth universal definition of myocardial infarction.
- Patients willing to participate in the study.

Exclusion Criteria

- Patients not willing to participate in the study.
- Patients with congenital heart disease, valvular heart disease.

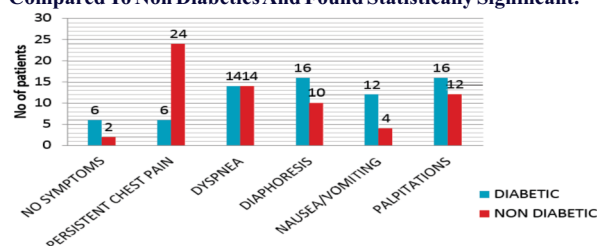
Baseline Characteristics Of Patients With Diabetes Vs Without Diabetes

Variable	Diabetes Group N=15	Non- Diabetes Group N=15	P value
AGE , YEARS	54 $\pm$ 2.1 YEARS	62 $\pm$ 2.4 YEARS	0.06
MALE/FEMALE	16/14	19/11	0.06
BMI	24.4	21.2	0.05
STEMI	10	12	0.09
NSTEMI ACS	5	3	0.08
PRIOR MI	1	NONE	
HYPERTENSIO N	12	8	0.06
DYSLIPIDEMIA	5	9	0.07
SMOKING	3	2	0.08

**Gender Distribution In Diabetic And Non Diabetic****Symptomatic Presentation Of Patients With Vs Without Diabetes**

Symptoms	Diabetic N=15	Non-diabetic N=15	P Value
NO SYMPTOMS	6	2	0.06
PERSISTANT CHEST PAIN	6	24	0.03
DIAPHORESIS	14	14	1
NAUSEA/VOMITING	16	10	0.07
DYSPLNEA AT REST	12	4	0.06
PALPITATIONS	16	12	1
SYNCOPE	16	18	0.08

Persistent Chest Pain Was Absent In Majority Diabetics As Compared To Non Diabetics And Found Statistically Significant.

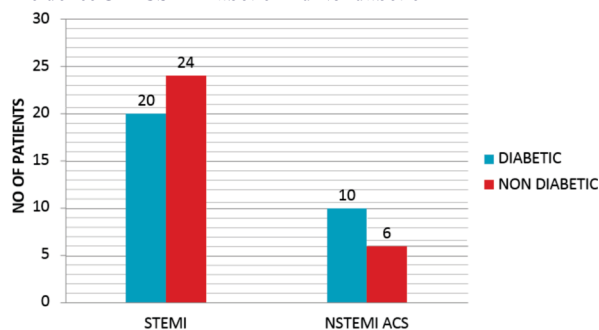
**Symptomatology In Diabetic And Non- Diabetic****Inclusion Criteria**

Kilips Classification In Diabetic And Non-diabetic

Kilips Classification	Diabetic N=15	Non-diabetic N=15
CLASS 1	12	18
CLASS 2	10	6
CLASS 3	4	4
CLASS 4	4	2

Patients With Diabetes Presented With Pulmonary ODEMA And Cardiogenic Shock**Ejection Fraction In Diabetic And Non-diabetic**

Heart Failure Type	Diabetic N=15	Non-diabetic N=15	P value
HFrEF	16	6	0.003
HFmEF	6	16	0.06
HFpEF	8	8	0.09

Incidence Of ACS In Diabetic And Nondabetic**Time To Hospital Of Patients With Vs. Without Diabetes**

Time To Hospital	Diabetic N=15	Non-diabetic N=15	P value
<6 H	4	14	0.08
6 TO 12 H	4	10	0.06
>12 H	20	6	0.02

11 Of The 15 Patients (73%) Of ACS With Diabetes Presented Late To The Hospital As Compared To Those With Non-diabetes(20%).

RESULTS

- Patients age ranged from 44 to 85 years.
- Patients with diabetes were older (mean age 62 vs. 54 in non diabetics) and were more often women (46% vs. 36% in non diabetics).
- Diabetics had higher BMI (24.4 vs. 21.2) as compared with non diabetics and were more likely to present with NSTEMI ACS and were more likely to have hypertension and dyslipidemia .
- Average fasting glucose in diabetic was 250mg/dl and in non-diabetic was 92mg/dl.
- Incidence of heart failure with reduced ejection fraction was more in diabetics (average 25%) than those in non diabetics (average 45%).
- Patients with diabetes are less likely to present with typical symptoms and are slower to receive treatment.
- Mean duration of hospital stay was more in diabetics (average 7 days) as compared to those in non-diabetes(average 3 days).

CONCLUSION

- Incidence of Diabetes is very common in ACS patients.
- Patients with ACS having diabetes have reduced ejection fraction.
- Both diabetes and ACS are associated with poor prognosis.
- Diabetics are less likely to present with typical chest pain and more likely to experience delay in treatment . This study may increase clinician awareness of recognizing ACS to reduce delay in the diagnosis and treatment .

Limitations

- Our sample size was limited.
- Our study was a observational study that did not include follow up data.
- Further studies need to be conducted to explore the prognostic value of diabetes on short or long term mortality among ACS patients.

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