*Section A-Research paper*

# COMPARATIVE EVALUATION OF DIABETIC AND NON-DIABETIC PATIENTS SUFFERING FROM ST-ELEVATION MYOCARDIAL INFRACTION(STEMI).

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**ABSTRACT**
"Acute coronary syndrome(ACS) (STEMI, non-STEMI, and unstable angina) is the primary cause of coronary artery disease deaths in affluent nations and the second in impoverished ones in present times". Even though epicardial channel recanalization is critical for survival, micro-vascular flow was the most significant predictor of outcome. ST-segment discrepancies suggest myocardial rather than epicardial flow, providing a coronary angiography prognosis. Our study compared the ST segment resolution & its outcome in diabetic and non-diabetic STEMI patients who received thrombolysis. Diabetic STEMI patients showed higher thrombolysis failure rates than the other group. Furthermore, no statistically significant difference found for LVEF following thrombolysis between 2 groups". In addition, DM group showed excessive triglyceride levels and longer hospital duration stay than N-DM group. Hence, Diabetics had higher death and disability rates than non-diabetics despite immediate thrombolytic treatment.

**Keywords:** STEMI**,** non-STEMI, DM**,** N-DMc**,** LVEF**.**

## INTRODUCTION

Presently , ACS (like STEMI, non-STEMI, unstable angina) is the leading cause of death in developed countries and the second-leading cause of death in developing countries present time.[1,2]

Screening strategies for diabetic patients have been created even before symptoms occur since there is a strong association between CAD and diabetes. The occurrence of silent MI and ischemia has grown dramatically because diabetic patients are typically unaware of cardiac ischemic discomfort. Diabetes increases the risk of sudden cardiac death.

Although epicardial vessel recanalization is necessary for survival, micro-vascular flow was the biggest predictor of outcome. ST segment changes indicate myocardial rather than epicardial flow in order to yield prognostic information beyond that provided by coronary angiography alone.[3] Hence, in our study we had compared ST segment resolution & its outcome in diabetic and non-diabetic STEMI group who received thrombolysis.

## AIM

The study's main goal is to compare and evaluate STEMI in diabetic and non-diabetic patients.

## INCLUSION CRITERIA

1. Patients who all reported to the hospital within 12 hours of onset chest pain with STEMI.
2. Patients who are already been diagnosed diabetic in past & on medication.
3. Patients who has been recently diagnosed with diabetics.
4. Patients those are non-diabetic.
5. Patients with positive troponin-I test.

## EXCLUSION CRITERIA

1. Patients reported to the department after 12 hours of onset of symptoms.
2. Those patients who are contraindicated for thrombolysis.
3. Patients having symptom of "CHF ,CAD & type 1 DM".
4. Patient on medications for cardiomyopathy ( like "Daunorubicin, Bleomycin, Adriamycin" etc.)
5. Patient associated with any "comorbid condition ( CLD, MI, Malignancy ,thyroid therapy , CKD)".

## MATERIALS & METHOD

**TYPE OF STUDY:** We have conducted a comparative type of study.

## STUDY SETTING

Patients reported to the Krishna Institute of Medical Sciences, Karad's Medical Intensive Care Unit (MICU) .

## STUDY DURATION

Our study duration was around 18 months in total starting from October 2018 ending to March 2020).

## ETHICAL CLEARANCE

Our study protocols and ethics were reviewed and approved by the relevant institutional committees. Number 0257 for the 2018-2019 protocol.

**INFORMED WRITTEN CONSENT**

After obtaining a written consent , patients fulfilling the inclusion criteria were included in the study.

**DATA COLLECTION**

Patients fulfilling study selection criteria were recruited randomly. Age, gender, primary complaint, diabetic history, and other medical conditions were questioned of patients. Patients underwent through clinical examination including vitals and systemic findings. A validated form recorded these findings.

**INVESTIGATION**

1. ECG on admission & 90 min after thrombolysis .
2. Cardiac Marker ( Troponin-I, CPK –MB).
3. Blood Sugar Level ( Fasting & Post-prandial)
4. Glycosylated haemoglobin ( HbA1c)
5. 2D-ECHO

1. The electrocardiograms were recorded using a "BPL Cardiart 9108 Machine" with three channels, one rhythm, a voltage of 1 mV = 10 mm, and a speed of 25 mm/sec as standard settings.
2. Fasting blood glucose levels were estimated using early morning venous blood samples taken with aseptic precautions in an EDTA sodium fluoride vacutainer. The same samples were taken for a glucose estimation two hours after eating.
3. The EM360 Transasia machine was used to automatically assess blood sugar levels (fasting and postprandial) using Trinder's approach (Glucose Oxidase-Peroxidase approach).
4. Cardiac markers (Troponin-I and CPK-MB) were determined from venous blood samples obtained in a plain vacutainer using the IFFC method for CPK-MB and the ERBA method for Troponin-I.
5. Venous blood samples were taken under aseptic conditions, placed in an EDTA vacutainer (2 ml), and tested for hemoglobin A1c levels on an EM360 Transasia machine using a latex immunoturbidimetric test. It is an average of blood sugar levels over the preceding 8–12 weeks.

| **Class** | **HbA1c Value** |
|---|---|
| Normal | <5.7 |
| Pre-diabetics | 5.7-6.4 |
| Diabteics | >6.4 |

**TABLE 1: $HbA1_C$ VALUES FOR NORMAL, PRE-DIABETES AND DIABETIC INDIVIDUALS [4]**

## STASTICAL ANALYSIS

Data was gathered using a pre-tested questionnaire. Excel was used to insert the data we had gathered. The data is expressed using frequencies, percentages, charts, and graphs. Quantitative variables have means and standard deviations. All traits received detailed summaries. Summary statistics for continuous variables were mean and standard deviation (SD). The data summaries and graphs utilized numbers and percentages to communicate category information. Using the chi-square (2) test, the relationship between two category variables was examined. The unpaired t test compared the means of two unrelated groups' analytical variables. The result of the study was considered statistically significant if the p-value comes to be less than 0.05. The data was analyzed using IBM Statistics' SPSS version 23 and Microsoft Office 2007.

## RESULT

In this study , we found that a total of 160 patients were enrolled, 80 were diabetic and 80 non diabetic.In this, 101 were males (63.1%) and 59 were females (36.0%).

**GENDER**

| Gender | n | Percent |
|---|---|---|
| Male | 101 | 63.1 |
| Female | 59 | 36.9 |
| Total | 160 | 100 |

**TABLE 2: ACCORDING TO GENDER**

In present study, we have 80 non-diabetic patients ,with 48 males (60%) and 32 females (40%). Similarly, 80 diabetic patients,with 53 males (66.3%) and 27 females (33.8%). We found no discernible difference in the number of males and females in each study group.

| Sex | Non-Diabetic(n=80) | | Diabetic(n=80) | | |
|---|---|---|---|---|---|
| | n | % | n | % | |
| Male | 48 | 60.0% | 53 | 66.3% | $\chi^2$=0.671 DF=1 p=0.413 |
| Female | 32 | 40.0% | 27 | 33.8% | |
| Total | 80 | 100.0% | 80 | 100.0% | |

**TABLE 3: ACCORDING TO DIABETIC & NON DIABETIC**

Out of 160 patients in our study , we found that majority of them were between age range of 60- 69(38.8%) years of age followed by >70 (25%) years, 50-59(19.4%) years, 40-49(11.9%) followed by lowest in 30-39(5%) years of age.

| Age(yrs) | n | Percent |
|---|---|---|
| 30-39 | 8 | 5 |
| 40-49 | 19 | 11.9 |
| 50-59 | 31 | 19.4 |
| 60-69 | 62 | 38.8 |
| ≥70 | 40 | 25 |
| Total | 160 | 100 |

**TABLE 4: ACCORDING TO AGE**

"In our study, we found that 31 range (38.1%) of N-DM are same as that diabetic age bracket of 60–69 years old, followed by 23 (288.8%) in the 70-year-old group, 13 (16.3%) in the 50–59 year group, 9 (11.3%) in the 40–49 year group, and 4 (5.5%) in the 30-39 year group. In the diabetic group, 31 cases (38.8%) were in the age range of 60-69 years, followed by 18 cases (22.5%) in the age range of 50-59 years, 17 cases (21.3%) in the age range of 70 years, 10 cases (12.5%) in the age range of 40-49 years, and 4 cases (5.0%) in the age range of 30-39 years".

| Age(yrs) | Non-Diabetic(n=80) | | Diabetic(n=80) | | |
|---|---|---|---|---|---|
| | n | % | n | % | |
| 30-39 | 4 | 5.0% | 4 | 5.0% | $\chi^2$=1.7 DF=4 p=0.780 |
| 40-49 | 9 | 11.3% | 10 | 12.5% | |
| 50-59 | 13 | 16.3% | 18 | 22.5% | |
| 60-69 | 31 | 38.8% | 31 | 38.8% | |
| ≥70 | 23 | 28.8% | 17 | 21.3% | |
| Total | 80 | 100.0% | 80 | 100.0% | |

**TABLE 5: ACCORDING TO DIABETIC & NON DIABETIC**

In our study, we found that mean age difference between groups for N-DM group was 61.4 ± 12.1 years and 59.6 ± 10.4 years in the diabetic group.

| **Parameters** | **Non-Diabetic(n=80)** | | **Diabetic(n=80)** | | |
|---|---|---|---|---|---|
| | **Mean** | **SD** | **Mean** | **SD** | |
| Age | 61.4 | 12.1 | 59.6 | 10.4 | t=0.989<br>p=0.326 |

**TABLE 6 : MEAN AGE FOR BOTH THE GROUPS.**

In our study, we have included, patients with anterior wall MI, inferior wall MI, and posterior wall MI were included in the present study. Out of these patients, anterior wall MI was seen the most often100 (62.5%), followed by posterior wall MI 56 (35.0%), and posterior wall MI 4 (2.5%).

| **MI** | **n** | **Percent** |
|---|---|---|
| AW | 100 | 62.5 |
| IW | 56 | 35 |
| PW | 4 | 2.5 |
| Total | 160 | 100 |

**TABLE 7 : CASES ACCOPRDING TO ANATOMICAL LOCATION OF MI.**

Following thrombolysis, we found that the 'ST' Segment resolution in the diabetic group showed a statistically significant (2=11.16, DF=1, p=0.00083) relation when compared to that of non-diabetic group.

| **ST Resolution** | **Non-Diabetic(n=80)** | | **Diabetic(n=80)** | | |
|---|---|---|---|---|---|
| | **N** | **%** | **N** | **%** | |
| Failed | 13 | 16.25 | 32 | 40 | $\chi^2$=11.16<br>DF=1<br>p=0.00083* |
| Complete/Partial | 67 | 83.75 | 48 | 60 | |
| Total | 80 | 100 | 80 | 100 | |

| *significant at 5% level of significance(p<0.05) |
|---|

**TABLE 8 : COMPARISON OF FAILED ST SEGMENT RESOLUTION IN ECG BETWEEN THE GROUPS.**

Complete 'ST' segment resolution was seen in 25 (45.45%) non-diabetic patients and 24 (30%) diabetic patients following thrombolysis, with no statistically significant difference (p=0.86).

| **ST Resolution** | **Non-Diabetic(n=80)** | | **Diabetic(n=80)** | | |
|---|---|---|---|---|---|
| | **N** | **%** | **N** | **%** | |
| Complete | 25 | 45.45 | 24 | 30 | $\chi^2$=0.0294 DF=1 p=0.86 |
| Failed /Partial | 55 | 54.55 | 56 | 70 | |
| Total | 80 | 100 | 80 | 100 | |

**TABLE 9 : COMPARISON OF COMPLETE ST-RESOLUTION FOR BOTH GROUPS.**

Following thrombolysis, we found that partial 'ST' segment resolution was seen in 42 (45.45%) non-diabetic patients and 24 (30%) diabetic patients, with that of non-diabetic group significantly outnumbering the diabetic group (2 = 8.3559, DF = 1, p = 0.003844).

| **ST Resolution** | **Non-Diabetic(n=80)** | | **Diabetic(n=80)** | | |
|---|---|---|---|---|---|
| | **N** | **%** | **N** | **%** | |
| Partial | 42 | 52.5 | 24 | 30 | $\chi^2$=8.3559 DF=1 p=0.003844* |
| Failed /Complete | 38 | 47.5 | 56 | 70 | |
| Total | 80 | 100 | 80 | 100 | |
| *significant at 5% level of significance(p<0.05) | | | | | |

**TABLE 10: COMPARISON OF PARTIAL ST SEGMENT REDSOLUTION IN WCG BETWEEN 2 GROUPS.**

In the present study, we have used two thrombolysing agents: streptokinase and reteplase. Streptokinase was administered in 100 patients, whereas reteplase was given to the remaining 60. Out of 100 patients who had streptokinase thrombolized 27 (27%) showed a complete resolution, 41 (41%) partial resolution, and 32 (32% were unaffected). Among the 60 patients who had reteplase thrombolized, 22 (36.7%) showed a complete resolution, 25 (41.7%) partial resolution, and 13 (21.7%) showed failed resolution. The two agents used showed no statistically significant differences (p = 0.276).

| **ST Resolution** | **Thrombolysing Agent STK** | | **Thrombolysing Agent RTE** | | |
|---|---|---|---|---|---|
| | **N** | **%** | **N** | **%** | |
| Complete | 27 | 27.0% | 22 | 36.7% | $\chi^2$=2.57 DF=2 p=0.276 |
| Partial | 41 | 41.0% | 25 | 41.7% | |
| Failed | 32 | 32.0% | 13 | 21.7% | |
| Total | 100 | 100.0% | 60 | 100.0% | |

**TABLE 11: COMPARISON OF ST RESOLUTION IN ECG AMONG 2 GROUPS.**

Patients with anterior wall MI who were N-DM had a diabetic ejection fraction of 44.7±7.6% compared to DM patients, who had a mean ejection fraction of 43.7±10.2%.We found no stastical significant difference between the either groups (p = 0.598). In inferior-wall MI patients, the mean ejection fraction observed was 46.5±9.2% in non-diabetics and 46.9±7.3% in diabetics. Between the two groups, there was no significant difference observed (p = 0.852). Non-diabetic posterior wall MI patients had a mean ejection fraction of 45±4.2%, whereas diabetics had 37±18.4%. Between the two groups, there was no significant difference observed (p=0.610). We found no stastically significant difference in any of the groups listed.

| **MI** | **EF% Non-Diabetic (n=80)** | | **EF% Diabetic (n=80)** | | |
|---|---|---|---|---|---|
| | **Mean** | **SD** | **Mean** | **SD** | |
| AW | 44.7 | 7.6 | 43.7 | 10.2 | t=0.53 p=0.598 |
| IW | 46.5 | 9.2 | 46.9 | 7.3 | t=0.188 p=0.852 |
| PW | 45.0 | 4.2 | 37.0 | 18.4 | t=0.60 p=0.610 |

**TABLE 12: COMPARISON OF EF ACCORDING TO ANATOMICAL LOCATION OF MI BETWEEN THE 2 GROUPS.**

In our study we found that, mean ejection fraction in non-diabetic group was 45.4% plus 8.2%, whereas for diabetic one, it was 44.6% plus 9.6%.Hence, no stastical significant difference we found between the groups (p = 0.583).

| **Parameters** | **Non-Diabetic(n=80)** | | **Diabetic(n=80)** | | |
|---|---|---|---|---|---|
| | **Mean** | **SD** | **Mean** | **SD** | |
| EF% | 45.4 | 8.2 | 44.6 | 9.6 | t=0.550<br>p=0.583 |

**TABLE 13:COMPARISON OF EF% BETWEEN 2 GROUPS AT POST-MI**

In our study, we found that, mean duration of hospital stay for non-diabetic was 6.4 ± 2.7 days, whereas in diabetic patients, it was 7.4 ± 2.7 days. We found significantly longer stay for diabetic patients than in non-diabetic patients (p = 0.023, 5% threshold of significance).

| **Parameters** | **Non-Diabetic(n=80)** | | **Diabetic(n=80)** | | |
|---|---|---|---|---|---|
| | **Mean** | **SD** | **Mean** | **SD** | |
| Duration of stay(days) | 6.4 | 2.7 | 7.4 | 2.7 | t=-2.3<br>p=0.023* |
| Note: * significant at 5% level of significance (p<0.05) | | | | | |

**TABLE 14: DURATION OF STAY AMONG 2 GROUPS.**

In our study we found that out of the 80 N-DM patients, 77 (96.3%) were discharged, while three (3.8%) experienced mortality. Based on the available data, the discharge rate for patients in the diabetic group was 93.8%, with a corresponding diabetic mortality rate of 6.3%. we conclude that there was no statistically significant difference in outcome between them, as indicated by a p-value of 0.468.

| **OUTCOME** | **Non-Diabetic** | | **Diabetic** | | |
|---|---|---|---|---|---|
| | **n** | **%** | **N** | **%** | |
| Death | 3 | 3.8% | 5 | 6.3% | $\chi^2$=0.526 DF=1 p=0.468 |
| Discharge | 77 | 96.3% | 75 | 93.8% | |
| Total | 80 | 100.0% | 80 | 100.0% | |

**TABLE 15: COMPARISON OF OUTCOME AMONG 2 GROUPS.**

The mean HbA1c levels for individuals with diabetes were 7.9  1.9, while the control group exhibited levels of 5.6  0.5. We conclude that HbA1C levels of the DM group were significantly higher than those of the control group (p = 0.001).

| **Parameters** | **Non-Diabetic(n=80)** | | **Diabetic(n=80)** | | |
|---|---|---|---|---|---|
| | **Mean** | **SD** | **Mean** | **SD** | |
| HbA1C | 5.6 | 0.5 | 7.9 | 1.9 | t=-10.6 p<0.001* |
| Note: * significant at 5% level of significance (p<0.05) | | | | | |

**TABLE 16: COMPARISON OF $HbA1_C$ BETWEEN THE 2 GROUPS.**

In our study we found that, non-diabetic patients had mean triglyceride levels of 106.6±44.9, whereas diabetic patients had mean triglyceride levels of 140.2±107.6, showed stastically significant higher than the non-diabetic group (p = 0.011). The non-diabetic group had mean HDL levels of 45.9±110.1, whereas the diabetic group had a mean of 44.1±12.8. Between the two groups, there was no significant observed difference (p=0.302). The non-diabetic group had mean LDL levels of 99.2±29.8, whereas the diabetic group had readings of 89.2±37.6. Between the two groups, there was no significant observed difference (p=0.064).

| Lipid Profile | Non-Diabetic(n=80) | | Diabetic(n=80) | | |
|---|---|---|---|---|---|
| | Mean | SD | Mean | SD | |
| TGS | 106.6 | 44.9 | 140.2 | 107.6 | t=-2.56<br>p=0.011* |
| HDL | 45.9 | 10.1 | 44.1 | 12.8 | t=0.86<br>p=0.302 |
| LDL | 99.2 | 29.8 | 89.2 | 37.6 | t=1.72<br>p=0.064 |
| Note: * significant at 5% level of significance (p<0.05) | | | | | |

**TABLE 17: COMPARISON OF LIPID PROFILE BETWEEN 2 GROUPS.**

## DISCUSSION

Compared to non-diabetic individuals, DM males have a twofold higher incidence of CAD after menopause, while DM females have a fourfold higher incidence. CAD kills 33% of diabetics over 40 years old. It appears to be younger than usual. The frequency and incidence of triple vessel disease are enhanced in individuals with diabetes owing to the fibrous plaques' wider dispersion. "In situations of AMI, ST-segment resolution in a 12-lead ECG 90 minutes after thrombolysis may be utilized to assess the outcome of fibrinolytic treatment".[5]

## AGE

In the present study, there were 101 male participants (63.1%) and 59 female participants (36.7%). There were 1.71 males for every female. "Out of 101 males, 53 were enrolled in the DM group, 48 were in N-DM group out of which 27 females were in the DM group and 32 were not". "Shahriar Iqbal et al. discovered that out of a total of 100 participants, the majority of male subjects were male (58%)in the DM group and (88%)in N-DM group, while females made up (42%)and (12%) in the DM and N-DM groups, respectively".[6] Compared to the present study, which had a ratio of 2.70, their study had a higher male-to-female ratio. Compared to a previous study by RK Singh et al., which comprised 176 men (77.2%) out of 228 patients and 52 females (22.8%), the present study had a higher male-to-female ratio.[7] In

our present study mostly included participants aged 60–69 (38.8%), followed by those aged 70+ (25%).

The maximum number of cases were seen in the age group between 60–69 (38.8%) years in N-DM patients, followed by >70 years (28.8%). Maximum cases of DM were seen in patients aged 60–69 (38.8%), followed by those aged 50–59 (22.5%). In comparison to the DM, whose mean age was 59.6 ±10.4 years, the N-DM group's mean age was 61.4±12.1.

**LOCATION OF MYOCARDIAL INFARCTION**

In our study, a total of 100 patients (62.5%) in the DM and N-DM study groups were diagnosed with an anterior wall myocardial infarction. There were 56 patients with inferior wall myocardial infarction (35% of the total), compared to 4 patients (2.5% of the total) who presented with posterior wall myocardial infarction.

In 52 DM and 48 N-DM, an anterior wall MI occurred. Superior wall MI was seen in 26 (32.5%) DM patients and 30 (37.5%) DM patients, respectively. In both groups, two patients, or 2.5%, experienced MIs in the posterior wall. Similar to the present study by RK Singh et al., anterior wall MI was seen in 68.9% (157 patients) and inferior wall MI in 31.1% of patients.[7]

**COMPARISON FOR ST SEGMENT RESOLUTION BETWEEN THE 2 GROUPS**

There were 24 cases of complete resolution of ST-segment elevation (or 30%), 24 cases of partial elevation (or 30%), and 32 cases of failed elevation (or 40%) among the 80 diabetic patients who participated in the study. In non-diabetic group, there were total of 25 cases of complete elevation (or 31.3%), 42 cases of partial elevation (or 52.5%), and 13 cases of failed elevation (16.3%). According to the current study, the diabetic group had a greater risk of failed resolution.

Varshit Hathi et al. conducted a study that revealed that complete ST-resolution in 18 non-diabetic patients with acute myocardial infarction, while 6 diabetic patients exhibited ST-resolution failure.[8] In contrast, 174 diabetic patients demonstrated ST-resolution failure, which was comparable to the number of patients who achieved complete ST-resolution. The results of our study on diabetes topic were almost same as that of previous researches conducted in India. Their findings indicates that the majority of N-DM patients(52%), exhibited complete resolution (CR), 36% demonstrated partial resolution(PR), and 12% experienced failed resolution(FR). In instances of DM STEMI, a total of 28% of patients exhibited CR, 30% demonstrated PR, and 42% experienced RF.[9]

**COMPARISON FOR ST SEGMENT AMONG 2 GROUPS WITH RESPECT TO AGENT USED**

Reteplase and streptokinase were used in our present study. 100 patients were streptokinase-thrombolyzed, and 60 were re-embolized. Reteplase thrombolyzed 29 diabetic patients (36.3%) and 31 non-diabetics (38.8%), whereas streptokinase thrombolyzed 51 diabetics (63.8%) and 49 non-diabetics (61.3%). 27 patients (27%), 41 patients (41%), and 32 patients (32%), showed complete streptokinase resolution. 22 patients (36.7%) showed complete

reteplase thrombolysis resolution, 25 (41.7%) showed PR, and 13 (21.7%) showed PR. Both agents had similar percentages of resolution (p = 0.276). "Our present study found that reteplase was as effective as streptokinase in the INJECT trial".[10]

## ASSOCIATION OF EJECTION FRACTION WITH MI BASED ON ANATOMICAL LOCATION & DIABETES STATUS

The mean ejection fraction in anterior wall MI patients was 43.7±10.2% in the non-diabetic group and 44.7±7.6% in the diabetic group. Hence, we found no statistically significant difference (p=0.598) between the two groups in our study. The mean ejection fraction in patients with diabetic inferior wall MI was 46.5± 9.2%, whereas it was 46.55± 9.2% in patients in non-diabetic inferior wall MI groups (p = 0.852). Furthermore, the 2 groups (DM and N-DM) showed similar posterior wall MI results of 37.0±18% and 45.0±42%, respectively. Diabetes does not affect ejection fraction (p=0.583). Consistent with the present study, another study found that DM patients had LVEF of 53.9±3.8 and N-DM patients had 55.5±4.7,yet there was no statistically significant difference between the 2.[11]

## COMPARISON OF DURATION OF STAY & FINAL OUTCOME FOR 2 GROUPS.

In our study, mean non-diabetic patients' hospital stay duration was found to be 6.4±2.7 days, whereas mean diabetic patients' hospital stay duration was found to be 7.4±2.7 days. The duration of hospital stays is much higher for diabetic group then compared to non-diabetic group. Furthermore, duration of stay of patients we found to be much shorter in both groups but notably higher in the diabetic group. "According to a study by Syed Al et al., the duration of DM hospital stays was higher in DM compared to N-DM".[12]

## COMPARISON OF $HbA1_C$ & LIPID PROFILE FOR 2 GROUPS

### HbA1c

In our study, the non-diabetic group had a mean HbA1C of 5.6±0.5%, whereas the diabetic group had 7.9±1.9%. HbA1C levels were higher in diabetics (p = 0.001). HbA1C levels were 7.5+1.0% in the diabetic group and 4.9+0.5 in the non-diabetic group, which was statistically insignificant (p=0.001).[13] Similar findings were found in our present study also. "In a second study, Ul-Haque I et al. found that diabetic patients had mean HbA1C levels of 8.7±2.07%, whereas the non-diabetic group had 6.0±1.21%. They concluded that diabetic group had significantly higher HbA1C levels than the non-diabetic group".[14]

### LIPID PROFILE

The results of our study showed statistically significant increase in triglyceride levels among diabetic patients (p = 0.011) when compared to non-diabetic patients. The mean triglyceride levels were found to be 106.6±44.9 mg/dl for non-diabetic patients and 140.2±107.6 mg/dl for diabetic patients. The study found that the average HDL levels in the non-diabetic group were 45.9±10.1 mg/dl, whereas the diabetic group had an average of 44.1±12.8 mg/dl. Additionally, the non-diabetic group had an average LDL level of 99.2±29.8 mg/dl, while the diabetic group had an average of 89.2±37.6 mg/dl. In our study we could not find a

statistically significant difference in the levels of HDL and LDL between the 2 groups (p = 0.064).

## CONCLUSION

DM- STEMI patients had a higher risk of thrombolysis failure than N-DM. The study found that men had a higher rate of anterior wall MI. The diabetes-free group had successful thrombolysis. No significant differences were observed between the two thrombolytic medications. Our study showed no statistically significant difference in terms of left ventricular ejection fraction for both groups following thrombolysis.Yet, in DM group, hypertriglycerideemia was observed and showed hospital duration time much longer than the non-diabetic group's. Hence, Despite quick thrombolytic treatment, diabetics had higher death and morbidity rates than non-diabetics.

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