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Research Article

**CLINICAL CORRELATION OF ST- ELEVATION IN LEAD
aVR AND LEFT MAIN CORNARY ARTERY STENOSIS**¹Dr. Aniqa Sahi, ²Dr. Saira Faryal Amjad, ³Dr. Israr Saeed Ghuman¹WMO, BHU Burala²THQ hospital Noshehra Virkan³BHU Chak Bhatti**Abstract:**

Objective: Purpose of work was to find out rate of narrowing of LMCA in the sufferers of ACS whose ST-segment has increased value lead aVR.

Study Design: Design of the study was cross sectional.

Setting: The department of cardiology in Chaudary Pervaiz Elahi Institute of cardiology located in Multan was the centre of this study.

Duration of Study: The duration of the study was 6 months.

Methods: 62 patients of acute coronary syndrome with ST-segment increased in value of lead aVR in model 12 lead angiography were used in the emergency department. In first three days after admission the coronary angiography was used. After twelve hours of the chest pain Troponin-T was delivered.

Results: All 62 patients were of 61.73 ± 7.095 years age. Males and females were respectively 47 and 15. Thirty-eight patients were greater than 60 years and other left were less than 60 years. The narrowing of the LMCA was discovered in 48 patients. 95 % of the Troponin-T positive patients had noteworthy stenosis.

Conclusion: It concludes that sufferers of the ACS, ST-segment increasing value of lead aVR LMCA.

Key Words: ACS, ST-segment increase in LaVR, LMCA.

Corresponding author:

Dr. Aniqa Sahi,
WMO, BHU Burala

QR code



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INTRODUCTION:

The outcome of acute myocardial ischemia is Acute Coronary Syndrome (ACS). Antiplatelet and anticoagulant therapies are urgently implied if ST elevation is noted in ACS patients. Electro angiography should be done in ten minutes. 75 percent blood mass is provided by the LMCA. Narrowing of the blood vessels causes the loss of life in almost all patients. Bypass surgery save the lives of some patients if timely done. Poor patients can save their lives drug-eluting stents and these stents are widely in use in place of surgery [1]. Tools which are used to rapid discovery of abnormality are much expensive than the 12-lead ECG. Easy and sensitive way of discovering ACS is Electro angiography. ECG provides the patients with ST segment elevation but it overlooked the aVR used to detect stenosis in ACS. This gives the abnormalities of different parts of the heart. Myocardial ischemia in the patients of ACS is provided by the ST-segment increase in the aVR. LMCA stenosis and artery diseases are the lesions [2].

The Electrocardiograph shows the dejection of the leads V4-V6 and ST segment increase in LaVR in patients. The Electrocardiograph style was ephemeral in acute myocardial ischemia without myocardial necrosis. Myocardial injury was the result of persistent ECG with myocardial necrosis [3]. Artery stenosis in the left portion and large ischemia can be identified in ECG as deviation of ST segment. The identification of the ECG signs of serious condition in medical field is important because it has the potential to save life through the use of. It is important to consider every ill patient with LMCA stenosis ST segment elevation in lead aVR particularly V4 to V6 leads with inverted T waves. LMCA stenosis can be identified by the lead aVR ST segment elevation including frontal ST elevation or ST-segment dejection.

METHOD

- **Setting:** CPEIC, Multan's cardiology department was the centre of this study.
- **Sample Technique:** the sampling technique used was Non-possibility, purposeful sampling.

Table 1: Frequency of Significant Left Main Coronary Artery Stenosis in Patients of ACS with ST-Segment Elevation in Lead aVR

	Total number of patients(n=62)	Frequency
Significant left main coronary artery stenosis present	48	77%
Significant left main coronary artery stenosis absent	14	23%

Table 2: Gender Distribution in Study Population

	MALE	FEMALE
Total number of patients (n=62)	47	15
Frequency	76%	24%

• **Inclusion Criteria:** Only ACS sufferers were the participants of this research work.

- **Exclusion Criteria:** 1. Myocardial infarction is already present in the patients. 2. Electro angiography diagnosed the right or left bundle branch block in the patients. 3. Percutaneous coronary intervention was the part of previous treatment of the patients. 4. Patients having bypass grafting. 5. Patients who were not willing for the hospital admission. Electro angiographic narrowing of the heart veins described as stenosis span is $\geq 50\%$ [2,3]. Greater than 0.5 mm lead aVR is ST segment increase [52].

Data Collection and Follow Up

Approval of the ethical committee for this study was gained after the consent of the patients. 62 patients of ACS from emergency department of CPEIC, Multan's emergency department were taken and all the findings of the different test were entered into the Performa of every patient after electro angiography performed within 72 hours of admission.

Data Analysis

SPSS software was used fro the investigation of data. Sex, age and electro angiographic results were the main variables. Mean and standard deviation, frequency and percentage were used for the calculation of the variables

RESULTS:

All 62 patients were of 61.73 ± 7.095 years age. Males and females were respectively 47 and 15. Thirty-eight patients were greater than 60 years and other left were less than 60 years. The narrowing of the LMCA was discovered in 48 patients. 95 % of the Troponin-T positive patients had noteworthy stenosis. In the total of 62 patients, 47 were males and 15 were females. Age average was 61.73 ± 7.095 . Twenty-four patients were <60yrs. All other patients were more than 60 years. Troponin-T positive were 39 patents and 23 were troponin-T negative. Left artery blockage of veins was found in the study population was 48 patients. Detailed outcomes analysis has been shown in the following Tables.

Table 3: Distribution of Significant Left Main Coronary Artery Stenosis in Male and Female Patients

	Significant left main coronary artery stenosis present	Significant left main Coronary artery stenosis absent
Total male patients (n=47)	37(79%)	10(21%)
Total female patients (n=15)	11(73.33%)	4(26.66%)

Table 4: Age Distribution in Study Population

	<60 years	>60 years
Total number of patients (n=62)	24	38
Frequency	38.7%	61.3%

Table 5: Distribution of Significant Left Main Coronary Artery Stenosis by Age Group

	Significant left main coronary artery stenosis present	Significant left main coronary artery stenosis absent
Patient <60 years (n=24)	17(71%)	7(29%)
Patient >60 years (n=38)	31(81.57%)	7(18.42%)

Table 6: Trop-T Distribution in Study Population

	Trop-T positive patients	Trop-T negative patients
Total number of Patients (n=62)	39	23
Frequency	63%	37%

Table 7: Distribution of Significant Left Main Coronary Artery Stenosis in Trop-T Positive and Trop-T Negative Patients

	Significant left main coronary artery stenosis present	Significant left main coronary artery stenosis absent
Trop-T positive Patients (n=39)	35(90%)	4(10%)
Trop-T negative patients (n=23)	10(43.47%)	13(56.52%)

DISCUSSION:

It is very important to know about the LMCA stenosis in the patients of ACS at early stage. For an early discovery of the ACS, Electrocardiography (ECG) is properly used instead of other tools. In the ACS sufferers of increased lead aVR of ST segment is very crucial and it requires treatment as early as possible because it is very fatal state [4]. LMCA stenosis is identified by the Lead aVR because it is too much important to identify the LMCA stenosis. In the lead aVR, increase in the ST segment was greater than .5 mm and in large amount LMCA stenosis was found in the patients

of ACS [5]. This study took sixty-two ACS sufferers were chosen. Their ST segment increase of LaVR was also taken. 62 patients were part of the study [6]. 47 were males and 15 were females. Age average was 61.73 ± 7.095 . Twenty-four patients were <60yrs. All other patients were more than 60 years. Troponin-T positive were 39 patents and 23 were troponin-T negative [7]. A large number of showed a remarkable LMCA stenosis (about in 48 patients). This outcome is relative to the research of Hengrussamee study is very much similar with this in which stenosis in LMCA availability was in eighty percent patients [8].

LMCA stenosis is greater in males than women and in old age is its favourite than the adult age respectively 79% versus 73.33% for men and women and 81.57% versus 71% for old and adult. This outcome was same to the study of Yamaj and Hengrussamee [9].

Troponin-T patients have the higher rate of stenosis of LMCA than troponin-T negative for example 90 versus 10 patients. Kosuge gave the same results [10]. He also provided those results when he examined 333 patient's ECG who were suffering from coronary syndrome. He discovered that stenosis of LMCA or blockage of veins was greater in the patients with ST segment elevation in lead aVR and positive troponin-T [11].

This study shows that it is very important medical tool to know about the ST segment elevation in the lead aVR at the arrival time, in the patients with Troponin T and of old age [12].

Invasive method and coronary arteriogram are used immediately for the patients ACS with increased values of Lead aVR of ST segment identified by the Electrocardiograph [13]. To know about the stenosis of LMCA in ACS patients with ST segment increased in Lead aVR, this study is very useful.

Study Limitation

Electro angiography results may be different for the patients who had the collateral artery and those who did not had. The number of the patients who were unwilling for admission was not the part of the study.

CONCLUSIONS:

This research shows that it is easy and beneficial to use ST-segment increased value on lead aVR at the time of their arrival in hospital of old aged male patients of ACS and with Troponin-T positive.

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