



An Observational Study on Anterior Wall Involvement and Incidence of Smoking in Myocardial Infarction in Young Adults

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Abstract

Aims and Objective: *To study the extent of anterior wall involvement and incidence of smoking in myocardial infarction in young adults*

Methods: *Patients admitted in CCU in RMMCH during the period of Oct 2017 and October 2019 were appraised. After satisfying inclusion and exclusion criteria 50 patients were brought forth into the study. The demographic profiles, modifiable and non modifiable risk factors for MI, Clinical signs and symptoms, ECG findings, ECHO findings, cardiac enzymes were recorded in a pre-devised proforma.*

Results: *Of the total patients i.e 50., 78% (n=39) of patients were found to have history of smoking. Among the patients anterior wall involvement was seen in 76 % (n=38) of patients.*

Conclusion: *Hence from above observations it has been ascertained that smoking has been implicated to have a major role in myocardial infarction among all modifiable risk factors. Furthermore anterior wall is found to be afflicted more than other regions of myocardium in young adults with myocardial infarction.*

Introduction

Myocardial Infarction per se occurs with the abrupt decrease in coronary blood flow that follows a thrombotic occlusion of a coronary artery previously impeded by atherosclerosis.

Onset of coronary artery disease is about 5-10 years earlier in Indians than other countries based on a study by Enas EA, Dhawan J, Petkar S et al¹.

According to Bergstrand *et al.*, coronary artery heart disease has been recognized more frequently in young age groups⁶.

According to one study Smokers have twice the

risk of coronary artery heart disease as non-smokers². According to one study smoking history was found to be 62%-90% in young individuals with myocardial infarction¹⁰.

In other study it has been highlighted that smoking was found to be present in about 60% of CAD patients³.

According to study by Zimmerman et al. smoking prevalence of 92% was observed in young CAD patients⁴.

According to study by Weinberg et al., smoking was the most common risk factor seen in a 66%⁵.

The incidence of Anterior wall MI was found to be high in young myocardial infarction patients^{3,8,9}

According to Weinberg study, anterior wall was involved in 50% in all STEMI patients⁵.

According to a study by Santhosh Kumar Sinha, anterior wall myocardial infarction was seen in 58.8% of CAD patients⁷.

According to A. Cengel and A. Tanindi, non-atherosclerotic coronary artery disease contributes to the development of CAD in young. In about 0.5% of patients undergoing coronary angiography abnormal origin of coronary arteries are seen such as separate origin of Left anterior descending artery are frequently seen. Hence contributing to increased incidence of anterior wall involvement¹¹.

Aims and Objectives

To study the incidence of anterior wall involvement and smoking in young myocardial infarction patients.

Inclusion Criteria

- ❖ All patients aged 40 yrs or younger admitted to RMMCH with a diagnosis of acute Myocardial infarction for the 1st time.
- ❖ Both genders

Exclusion Criteria

- ❖ Known case of coronary artery disease.
- ❖ Those patients 40 yrs or younger with acute Myocardial infarction who refused to give consent for study.

Methods

Patients admitted in CCU in RMMCH during the period of October 2017 and October 2019 was appraised. After satisfying inclusion and exclusion criteria 50 patients were brought forthwith into the study. The demographic profiles such as age, sex, life style, family history and clinical signs and symptoms, modifiable and non-modifiable risk factors for MI such as smoking, sdyslipidemia hypertension, diabetes, obesity waist hip ratio, BMI, ECG findings, ECHO findings, Cardiac enzymes were recorded in a pre-devised proforma.

Table-1: Patient characteristics

Patient characteristics	Variables	Frequency (n)	Percentage (%)
Age	20-34	12	24%
	34-40	38	76%
Sex	Male	43	86%
	Female	07	14%
Family history	Positive	35	70%
	Negative	15	30%
Smoking	Smokers	39	78%
	Non smokers	11	22%
Hypertension	Positive	26	52%
	Negative	24	48%
Dyslipidemia(LDL)	<130mgdl	11	22%
	>130 mg/dl	39	78%
Diabetes	Positive	6	12%
	Negative	44	88%
MI	STEMI	45	90%
	Anterior wall	38	76%
Obesity(BMI)	BMI >30	20	40%
	BMI <30	30	60%

Smoking

Men < 40 with MI	50	%
Smokers	39	78%
Non Smokers	11	10%

Table-3: Types of MI

MI	Cases (n=50)	%
STEMI	45	90%
NSTEMI	5	10%

Table-4:

AWMI	38	76%
IWMI	7	14%
LWMI	5	10%

Fig 1: Smoking

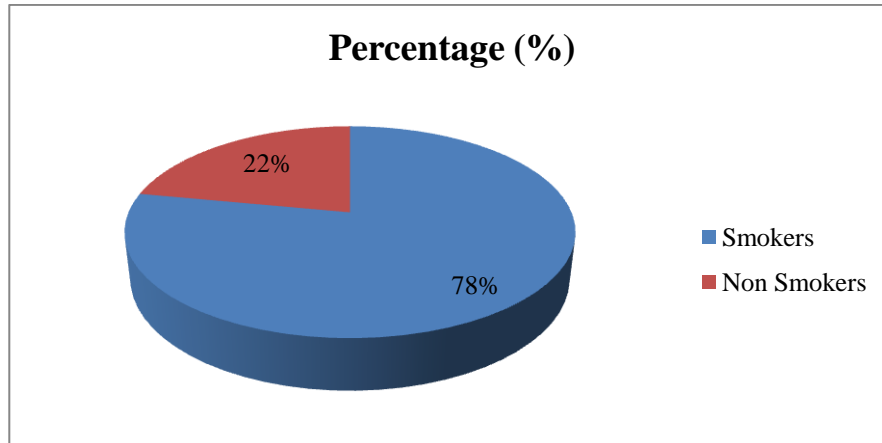


Fig 2: Hypertension

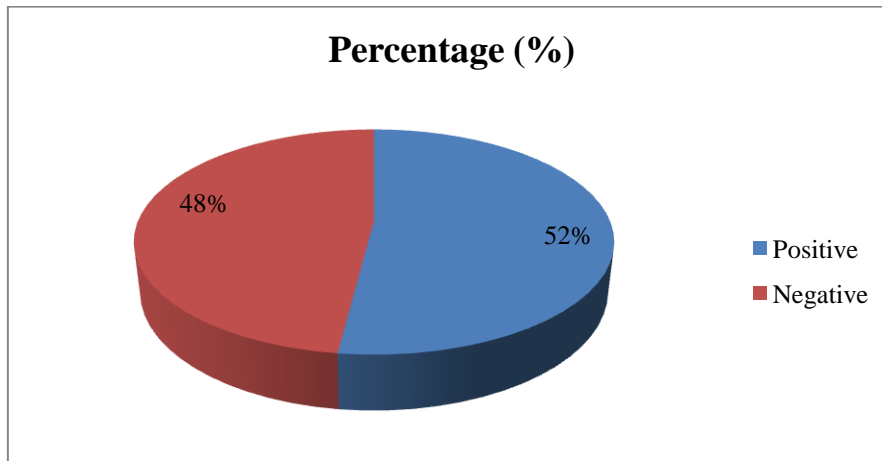


Fig 3: Dyslipidemia

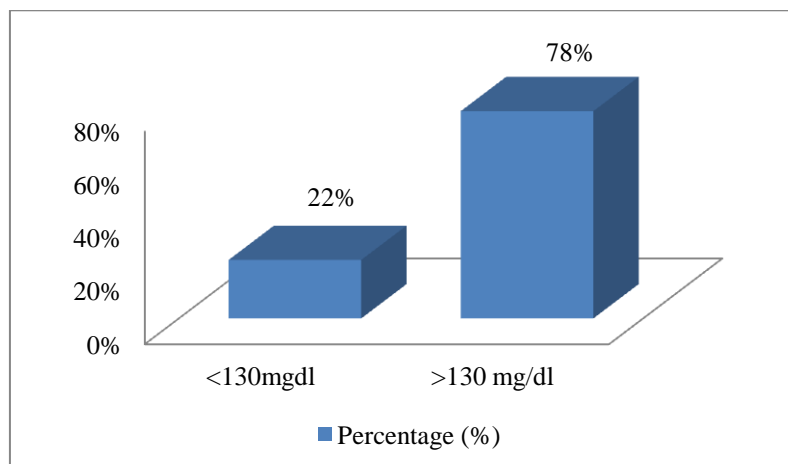
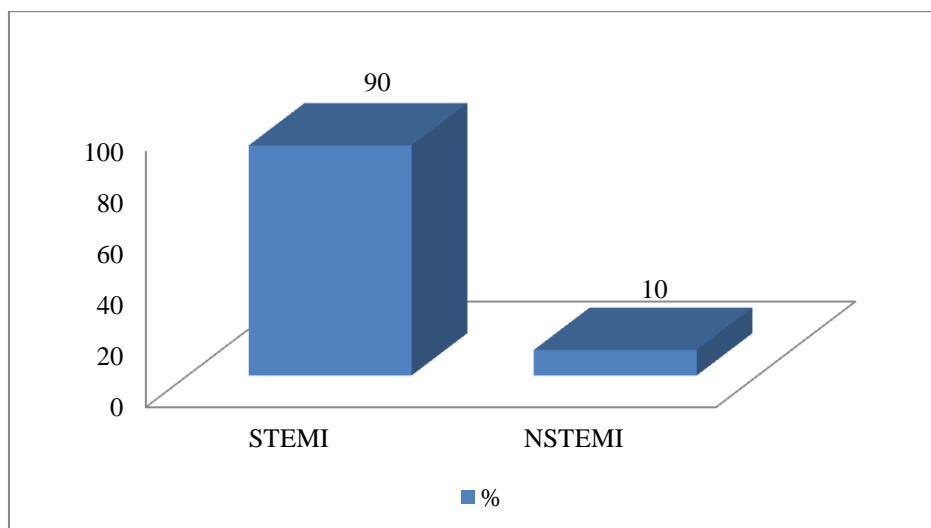
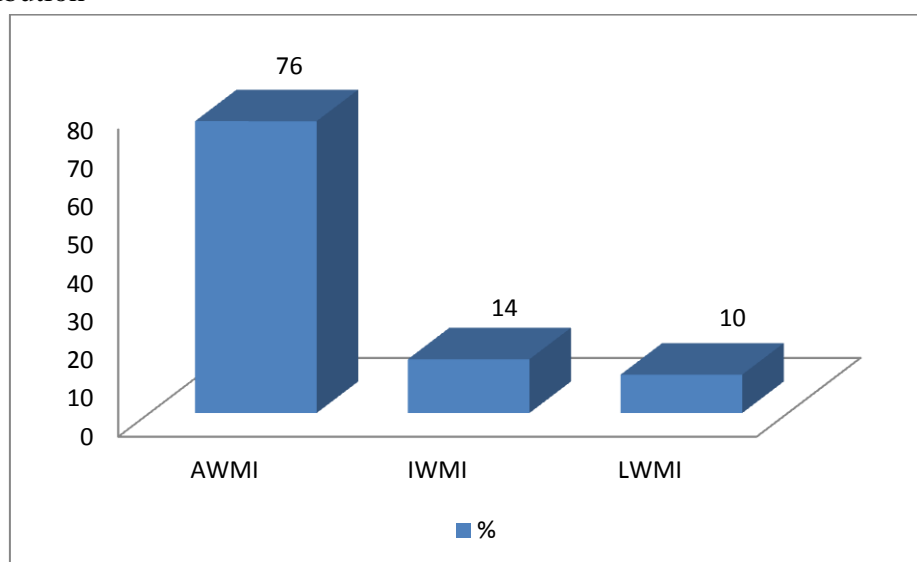


Fig 4: Types of MI**Fig 5:** Wall Distribution

Results

- 1) Out of 50 MI patients 39 patients had a positive history of smoking amounting to about 78% of total patients in our study. Hence it can be stated that smoking is the single most important risk factor in young myocardial infarction patients.
- 2) Of those 39 myocardial infarction patients with history of smoking all were male patients.
- 3) STEMI was found in about 45 patients i.e 90 % of total 50 pts enrolled in our study.
- 4) Among all patients, anterior wall was found to be involved in about 38 patients amounting to about 76%.

- 5) Hence it is pertinent to state that AWMI is the most common myocardial infarction in young individuals.

Discussion

- 1) Smoking is found to be the most common risk factor in almost 78% of MI patients as validated in other studies²⁻⁴ as well.
- 2) In STEMI patients percentage of anterior wall involvement is 81.5% which seems to quell the conundrums regarding the incidence of wall involvement in young myocardial infarction patients as authenticated by other studies as well^{3,11}

Conclusion

Hence it can be astutely stated that smoking constitutes the most cardinal risk factor in etiopathogenesis of myocardial infarction in young individuals. Furthermore smokers have increased prevalence for coronary spasm and decreased threshold for ventricular arrhythmias.

Anterior wall MI seems to supersede all other wall involvement in STEMI patients in young individuals.

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