

ORIGINAL ARTICLE

Role of Physio Biochemical Markers of Acute Myocardial Infarction in Young Adults

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ABSTRACT

Introduction: Background: Universally, cardiovascular problems remains a major cause of unfavorable results in young individuals, unlike its decrease in other age bunches. This group isn't well studied and includes an interesting hazard profile with less conventional cardiovascular risk components compared with more seasoned populations.

Objective: To highlight the prevalence and risk factors of myocardial infarction in young individuals

Material and Methods

Study design: quantitative cross sectional

Settings: Punjab Institute of Cardiology (PIC)

Duration: Six months i.e. 1st July 2021 to 31st December 2021

Data Collection procedure: A cross sectional study was conducted with the duration of six months in a tertiary care hospital Lahore. Young hospitalized patients were selected with the age limit of 40 years and admitted to hospital with acute myocardial infarction. Total number of patients was 100 placed in the group one and same numbers of individuals with same age group were also selected without history of any cardiovascular diseases from the population as control. Validated Hamilton anxiety rating scale was used to access the anxiety levels of an individual.

BMI, cardiac serum markers and liver enzymes were calculated. For this purpose venous blood was obtained from each individual and test was performed.

Results: The average age of the participant in this study was in between 20-40 years of age. In group one 77 were males and 23 females. Group two consist of 82 males and 18 females. As we see in the table 1 findings the levels of LDH, trop I, CKMB and SGOT are significantly high in group 1 which showing myocardial injury as the release of these markers in blood. Anxiety levels and cigarette smoking also noticed high in group 1 as compared to group 2.

Conclusion: This study illustrated uneasiness as a possibly driving hazard figure of AMI in young individuals, requiring the need for superior administration of psychosocial wellbeing in youthful age for relieving the hazard of AMI. Preventive intercessions are more likely to abdicate useful results in young individuals and future work on such preventive procedures may empower definition of worldwide arrangements and community campaigns to decrease the health-economic burden of AMI in young grown-ups and make strides results of wellbeing and quality of life

Keywords: Depression, Anxiety, Smoking, Acute Myocardial Infarction, Blood pressure

INTRODUCTION

Universally, cardiovascular problems remains a major cause of unfavorable results in young individuals, unlike its decrease in other age bunches. This group isn't well studied and includes an interesting hazard profile with less conventional cardiovascular risk components compared with more seasoned populations. Plaque rupture still remains the foremost common etiology of myocardial infarction, but interesting disorders such as plaque erosion, coronary microvascular dysfunction, spontaneous coronary artery dissection and coronary spasm related to drug utilize are more predominant in this age bunch. Such differing qualities of conclusion and presentation, together with helpful suggestions, emphasize the need to think about the profile of myocardial infarction in teenage people^{1,2}.

Smoking, a solid modifiable risk factor of AMI in all age group patients, has especially been highlighted as an

independent risk factor for AMI in young grown-ups individuals. The other diseases include diabetes Mellitus, Hypertension, Kidney diseases and dyslipidemia have been involved as determinants of the hazard of AMI in young patients^{3,4}. Mental issues counting uneasiness and misery are related with an expanded hazard of AMI in common population. In any case, the part of uneasiness within the improvement of AMI in young grown-ups isn't however clear and no local information is accessible on this clinically pertinent perspective. Besides, the few ponders that have displayed information on other clinical hazard components of AMI in young patients from the nearby South Asian population are compromised by irrelevant study design and size. As a result evidence based risk factors of AMI in younger individual's remains unconvincing^{5,6}.

MATERIAL AND METHODS:

A cross sectional study was conducted with the duration of six months in a tertiary care hospital Lahore. Young hospitalized patients were selected with the age limit of 40 years and admitted to hospital with acute myocardial infarction. Total number of patients was 100 placed in the group one and same numbers of individuals with same age group were also selected without history of any cardiovascular diseases from the population as control. Validated Hamilton anxiety rating scale was used to assess the anxiety levels of an individual.

All individuals enrolled in the study after informed consent to the individuals and their close attendants. Participants were selected as inclusion criteria with chest pain and age not more than 40 years of age admitted to hospital. The individuals were excluded from the criteria having symptoms more than 24 hours with chest pain.

Hamilton anxiety rating scale (HAM-A), a commonly utilized, approved and questionnaire-based psychometric tool, was utilized to decide the pre-AMI status of anxiety within the study members. HAM-A and the investigation survey were managed at the same time to the participants. Cardiac profile along with liver functions measured from the venous blood from each individual. BMI was calculated. Data was entered and analyzed using SPSS version 23.

RESULTS

Table 1: Parameters for Cardiac markers, Liver enzymes, Obesity, Anxiety and Smoking

No	Parameter	Group 1 (AMI) N=100	Group 2 control N=100	p - value
1	LDH	32.25±2.10	18.50±2.55	0.000
2	Troponin I	1.15±0.65	0.2±0.11	0.000
3	CKMB	35.50±20.45	8.50±7.25	0.000
4	SGPT	30.25±6.25	15.45±6.50	0.000
5	SGOT	42.62±8.52	23.5±5.65	0.000
6	ALP	135.34±20.45	84.25±17.25	0.750
7	HAM-A-Score	28.45±5.25	12.65±8.45	0.000
8	Cigarette smoke pack/day	0.7±0.5	0.1±0.3	0.000
9	BMI	25.65±3.95	23.50±4.20	0.785

Table 2: Parameters for Cigarette smoking, Anxiety & Body mass Index

No	Parameter	Group 1 N=100	Group 2 control N=100	
1	Cigarette Smoking	Non smoker	60	95
		Infrequent	12	7
		Moderate	32	2
		Chronic	17	0
2	BMI	Underweight	1	7
		Normal	75	77
		Overweight	32	26
		Obese	15	10
3	Anxiety	Mild	8	82
		Moderate	35	25
		Severe	70	30

The average age of the participant in this study was in between 20-40 years of age. In group one 77 were males and 23 females. Group two consist of 82 males and 18 females. As we see in the table 1 findings the levels of

LDH, trop I, CKMB and SGOT are significantly high in group 1 which showing myocardial injury as the release of these markers in blood. Anxiety levels and cigarette smoking also noticed high in group 1 as compared to group 2

Table 3: Clinical Risk factors of Acute Myocardial Infarction in Young Adults

No	Risk Factors	N (Percentage)
1	Anxiety	95 (95%)
2	Hypertension	92 (92%)
3	Diabetes Mellitus	90 (90%)
4	Kidney disease	75 (75%)
5	Smoking	65 (65%)
6	Family history of CVD	60 (60%)
7	Lack of physical activity	58 (58%)
8	Unhealthy diet consumption	55 (55%)
9	Obesity	20 (20%)

DISCUSSION

The current study has illustrated significantly higher frequencies of different The current study has illustrated significantly higher frequencies of different clinical hazard variables in adult young AMI patients as compared to non-AMI people of the same age^{6,7}. The display information did not reflect any contrast of weight, an built up conventional hazard factor for CVDs, between the youth AMI patients and healthy ones, proposing that hindering impacts of weight on cardiac wellbeing are more likely to show in afterward life and hazard factors other than obesity may have a more prominent part within the advancement of AMI in more youthful population, in this way delineating an alarmingly rising drift of AMI in more youthful population⁸. The show discoveries are reliable with past reports in numerous viewpoints but too include more current measurements to the existing information, proposing exchange of multiple hazard variables within the advancement of AMI in young grown-ups. It is very conceivable that different hazard expand each other's negative impacts by acting in concert and quickening the pathological components driving to AMI⁹⁻¹¹.

The present study too appeared a tall predominance of co-morbidities counting HTN, DM and renal disease in acute myocardial infarction patients. About two-thirds of the AMI patients had undesirable dietary habits, inactive ways of life and lacked regular exercise though most of the sound people had dynamic ways of life, healthy diet and locked in in daily routine of exercise.

Anxiety as a key factor in clinical setting for AMI. Uneasiness positioned as the foremost predominant clinically treatable and modifiable risk figure with 95% of the youth patients suffering from anxiety leading to myocardial infarction^{12,13}.

CONCLUSION

This study illustrated uneasiness as a possibly driving hazard figure of AMI in young individuals, requiring the need for superior administration of psychosocial wellbeing in youthful age for relieving the hazard of AMI. The most common risk factors include anxiety, Hypertension, diabetes mellitus, kidney diseases, smoking, family history of CVDs, lack of physical activity, unhealthy diet consumption and obesity have moreover been highlighted

of AMI in young grown-ups. Preventive intercessions are more likely to abdicate useful results in young individuals and future work on such preventive procedures may empower definition of worldwide arrangements and community campaigns to decrease the health-economic burden of AMI in young grown-ups and make strides results of wellbeing and quality of life.

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