

Original Research Article

The Validity of Heart Score and Life Style Factors of Evaluation for Patient with Chest Pain in Emergency Department

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Abstract

Chest pain is one of most common reasons for attended patients to emergency department. The risk of chest pain in the emergency department is critical. An acute coronary syndrome needs to be distinguished from a variety of other cardiac and non-cardiac diseases that cause chest pain and the rate of hospitalization in high-cost units. Risk for chest pain patients at the emergency department is recommended in several guidelines. The history, ECG, age, risk factors, and troponin So we can diagnose the patients with chest pain at the emergency department and identify both low and high risk patients for an acute coronary syndrome (ACS) by using HEART score and life style.

Distribution all patient attended to ED with chest pain in Heart score, application of Heart score to patient with chest pain to evaluate the critical cases and to decrease the intervention with not critical.

The study is prospectively cohort study. Clinical data from 282 patient present with chest pain in emergency department were analyzed and who had a major adverse cardiac event within 6 weeks (Acute Myocardial Infarction, Coronary Artery Bypass Graft, Percutaneous Coronary Intervention) from (1/10/2016) to (16/2/2017).

In Marjan city of medicine, we analyzed 282/940 patient were 78 (27.3%) discharge home and 204 (72.7%) admitted to hospital. Patient with absent of risk factor 116 p (41.1%), 166 (58.9) presented of risk factor were all suffer from chest pain, age, risk factor, past medical, serum troponin, electrocardiogram, distributed with heart score low, medium high. There was a relation between score element its higher with troponin level (43.64) and lower with one RF (5.77). 136 patient reached to the end point and 146 patients did not reached to the end point were all highly significant.

Chest pain is most common cause that lead patient attended to ED and that pain is duo to many causes some are life threaten and some not for decrease the cost, and good diagnosis and decrease uses of coronary care unit bed so that need do the necessary management to patient that complain of chest pain.

Key Words: Chest pain, Percutaneous, ACS

صحة تطبيق مؤشرات القلب وأسلوب الحياة لدى مرضى آلام الصدر في ردهة الطوارئ

الخلاصة

الم الصدر هو احد أكثر الأسباب لدخول المريض لردهة الطوارئ. مخاطر الم الصدر في ردهة الطوارئ هي حرجه . إمراض الشرايين ألتاجيه الحادة (Acute coronary syndrome) تحتاج تمييزها عن مختلف أسباب الم الصدر الأخرى سواء كانت قلبيه أو غير قلبيه التي تحتاج إلى دخول المستشفى وتحتاج تكلفة عالية. مخاطر الم الصدر في ردهة الطوارئ تحدد بعوامل (Guideline) عدة وهي التاريخ إلمرضي للمرضى، تخطيط القلب، العمر، عوامل الخطورة وقياس نسبة التروبونين. وبالتالي نستطيع تشخيص الم الصدر في الطوارئ وتحديد كلا المرضي مع المخاطر العالية والواطنة لإمراض ألتاجيه الحادة (Acute coronary syndrome) وذلك باستعمال مجموعه نقاط القلب (Heart score) الهدف من الدراسة: توزيع المرضي الذين يعانون من آلام الصدر على مؤشرات القلب Heart score وذلك لتحديد الحالات الخطرة وكذلك تقليل التداخلات الدوائية والتحليلية مع غير الخطرة -تصميم البحث -هي دراسة مستقبلية لمجموعه من المرضي (282) مريض يشكو من الم الصدر

دخل إلى الطوارئ تم تحليلهم ومن عانى من النتائج الخطرة بعد مرور ٦ أسابيع (الذبحة الصدرية الحادة، القسرة والتبديل الصمام التاجي) وذلك من ٢٠١٦/١٠/١ إلى ٢٠١٧/٢/١٦. النتائج: في مدينة مرجان الطبية تم تحليل ٢٨٢/٩٤٠ مريض حيث ٧٨ (٢٧,٣) تم اخراجهم للبيت و ٢٠٤ (٧٢,٧) تم إدخالهم للمستشفى. ١١٦ (٤١,١) لم يعانون من عوامل خطورة و ١٦٦ (٥٨,٩) كان لديهم عوامل خطورة والجميع كان يعاني من ألم الصدر. العمر، عوامل الخطورة، التاريخ المرضي، نسبة التروبونين والتخطيط القلبي تحدد عامل القلب العالي والمتوسط والواطي . هناك علاقة بين عوامل القلب تكون أعلاها مع التروبونين ١٣٦. مرض وصلوا لمرحلة النتائج المتقدمة. نستنتج من الدراسة ان ألم الصدر هو احد أكثر الأسباب التي تجعل المريض يدخل إلى الطوارئ. ويكون لعدده أسباب منها التي تهدد الحياة ومنها لا لتقليل التكلفة والتشخيص الجيد وتقليل استعمال أسرہ الإنعاش القلبي.

Introduction

Chest pain is commonest cause that lead Patient attended to Emergency Department as it account for approximately 5 to 20 % of all ED cases [1]. Its 2nd cause that lead patient attended to Emergency Department in United States [2]. in the United States about 12% of emergency department visits is Chest pain and has a mortality of about 5%.in one year [3]. The percentage of patient that attended to Emergency Department that complain of chest pain will be increase from 2006 to 2011 in United States [4]. 55-85% of the patients with chest pain presenting to the emergency department do not have a cardiac cause for their symptoms [5]. There are percentage of patient that attended to Emergency Department for chest pain are sixty [6]. The development of coronary heart disease (CHD) is due to Cardiac risk factors which are Diabetes Mellitus, Smoking, Cholesterol Level, Obesity, Hypertension, Physical inactivity and stress all of them that effect on Morbidity and Mortality [7, 8]. Good Life –Style that affect in perfect way on Coronary artery atherosclerosis [9]. Chest pain has multiple causes which consist of serious conditions such as musculoskeletal; Lumbosacrale, Respiratory cause Lung, the pleura or the trachea, Cardiac including the pericardium, Aorta, Esophagus, Diaphragm, Pain that referral from the abdominal cavity & its organs

like the Stomach, Gallbladder and Pancreas; and Neurological and Anxiety/emotion.

The approach to patients with chest pain represent difficult task in the emergency department (ED) [2]. It is the duty of the emergency department doctor to recognize an acute coronary syndrome (ACS) and differentiate it from a variety of other cardiac and non-cardiac diseases that may cause chest pain. In some patients, it is a relatively easy task, in particular in cases of ST segment elevation acute myocardial infarction (STEMI). However, the number of patients with STEMI of patient that complain of chest pain will found in Emergency Department is relatively small [12]. Considering the high mortality of acute myocardial infarction (AMI) and notable improvement in prognosis following timely interventions, early diagnosis of AMI and ACS is critical [13]. The first line of investigation to patient that attended to Emergency Department are electrocardiography ECG and the Serum Troponin [14,15]. Due to lack of standardization and inter-personnel variations, many risk stratification scores have been tried over time. And these scores were recommended by the international cardiac guidelines to be used for risk stratification [16,17]. One of these scores is The HEART score was recently developed.

Heart score for chest pain patient at emergency department

history	2	highly suspicious
	1	moderately suspicious
	0	non-suspicious
ECG	2	significant ST-depression
	1	nonspecific repolarization disturbance
	0	normal
Age	2	≤ 60
	1	45-60
	0	≥ 45
Risk factor	2	≥ 3 risk factor
	1	1 or 2 risk factor
	0	no risk factor
Troponin	2	≥ 2
	1	0.5 -2
	0	≤ 0.5 (normal)

(Six AJ, 2008 Backus BE 2010). For rapid risk stratification of patients presenting to the Emergency Department (ED) with chest pain [18]. Previous studies suggested that this score is useful for patient to recognize the low Risk patient with strong confidence .so can discharge them early from Emergency Department [19]. Heart Score contain five categories: History, ECG, Age, Risk factors and Troponin. Each category can be scored with 0, 1 or 2 points.[18]The difficulty in the ED is not only to diagnose patients with high possibility of ACS, but also to detect patients with less serious conditions as These patients may be discharged safely with less effort for testing or intervention [12].

Study design and setting and data collection time:

Its prospective cohort study contained adult patient complaining of chest pain to the ED of marjan medical city . during the period from 1st of August 2016 to 16th of February 2017.

Study population:

The total patients collected were (282) patients (179) male and (103) Female with age rang (18-112).

Inclusion criteria for patient:1-All patient with chest pain attended emergency department in Marjan medical city.

2-patient with age ≥ 18 years old .

3-patient who agree to participate in study .

Exclusion criteria for the patient:1- Patient with STEMI changes on the ECG.

2- patient who refused to participate in study.

3- patient with chronic chest pain.

4-patient with other complain like shortness of breath, palpitations or any other suspected angina without chest pain.

5- patient have chest pain due to direct chest trauma.

6- Patient who left ED without evaluation by physician.

7- Patients not including any suspicious elements not estimate by physician to demand cardiac work up, because difficult calculating Heart Score.

Data collection tools: A special design data sheet was used to identify the quality of Heart Score of chest pain in ED of Marjan medical city which include: 1-questionnaires

2- blood pressure and measurements of weight, height, BMI.

Questionnaires:

Data were collected by using pretested structure. The questionnaires that was prepared by researcher and supervisors. That include the following information.

socio demographic factor:

Include age, gender, residence, academic background, occupation ,physical activity

Measurements

blood pressure: It was measured using well validated and calibrated mercury sphygmomanometer. the blood pressure was measured while the patient were sitting position and comfortable but the old patient and patient with old DM IT was measured in sitting and standing position [20].

Body mass index (BMI):

The measurement according to the formula of (Weight kg /Height m²) the weight was measured in (kilogram) using the balance scale all subject (wearing light clothes with an accepted error 0.1kg). The height was measured in meter using a fixed board measured to the nearest 0.5 cm with the patient standing without shoes ,heels together and the head in the horizontal

Calculation:

Number of Pack – years = (Packs smoked per day) ×(Year as a Smoker)

Heart Score: include following item of heart score which are [23].

AGE: 0 point were given if patient was <45 y at time of attended, One point if patient was 45- 60y and two point if patient was >60y.

Risk Factors: The RF to patient that complain of chest pain which include HT, DM, high level of CHOL, smoking, obesity, unhealthy diet, physical inactivity and family history of CVA, AMI and atherosclerosis. so give 0 point to patient with no history of RF, one point was given to patient with one or two RF and two point was given to patient with more than two RF.

plane. where it contain some stages less than 18.5 kg/m² are underweight, 18.5 - 25 kg/m² are normal , from 25 – 30 kg/m² are overweight and more than 30 kg/m² are Obese [21].

ECG The 12 lead ECG generated from 10 physical electrodes where its attach to skin. each 4 of them to each limb & the other 6 to chest. right, left arm & left leg attach to a central terminal acting as an addition practical electrode in center of chest . The earth electrode is right leg. 12 lead of ECG refer to recording made from pairs or sets of these electrode.

S. troponin: Take one ml (cc) of patient blood use micropipette to transfer (80 micro) Of sample or place the transfer pipette supplied with the device in the specimen and depress the bulb to withdraw a sample hold the pipette in vertical position over the sample well of the card and deliver 2 drop (80–100 micro)of sample in to the sample well then read the result at 15 minutes

Pack year: Can measure the amount of smoking for patient for long time throw Pack Year .where number of cigarettes in pack in day multiply with number Of year that was smoked year, and so on [22].

ECG: Give 0 point to normal ECG .one point to not significant ECG and two point the ECG changes

Troponin: Troponin levels were measured according to local laboratory standards. Give 0 point to level <0.5 .one point to level 0.5 – 2.0 and two point to level > 2.0

Past chest pain history: 0 point to nonspecific history with apprehensive or nonspecific was given one point .give two point to patient with history of central chest pain that radiate to left shoulder that relive with sublingual Nitrate

Pilot study :A pilot study was carried out for three week. Prior to the collect data for current study .it was done for 20 patient with chest pain in emergency department

attended Marjan medical city . To find if there is any potential difficulties and to determine the time needed to collect the required data . and modification were done to the questionnaire according to the pilot study and the pilot study sample were excluded from the study

Data Analyses

Statistical analysis was carried out using SPSS version 20. Categorical variables were presented as frequencies and percentages. Pearson's chi square (χ^2) was used to find the association between categorical variables. A p-value of ≤ 0.05 was considered as significant.

Ethical approval:

1- The acceptance of ethical committee of Marjan teaching hospital in Babylon province was taken to conduct this study and official agreement Was obtained from Babylon Health Director.

2- Acceptance of scientific committee in the department of medicine in Babylon medical college 'Babylon University '.

3- The participant verbal consents the objective of the study.

4-study protocol was approved by the ethical committee in Babylon Medical college.

Limitation:

1-limited time for data collection.

2-not all responders gave their consent to the questionnaire.

3-some data are based on self reports of the patient leading to under or over answering. but information bias cannot be excluded.

Results

The mean age of all patient (54.87 ± 17.83). mean BMI (kg/m^2) (26.31 ± 3.0),

mean of troponin level (2.53 ± 1.96) mean of heart score (4.86 ± 2.67). 3.1. The Distribution of Patients According to Socio-demographic Characteristics Table 3.1 shows distribution of patients according to socio-demographic characteristics including (age, gender, residence, occupation and level of education, physical activity, ECG findings, troponin level, past medical history and presence of risk factors).

The Distribution of Patients According to Type of Risk Factor and Past Medical History, Table 2 shows distribution of patients according to type of risk factors and past medical history.

The Association between Heart score and Study Variables, Table3 shows the association between heart score and study variables Including (gender, residence, occupation, level of education and physical activity). There was significant association between heart score and all study variables.

The Association between Heart score and Score Elements, Table 4 shows the association between heart score and score elements including (age, ECG changes, troponin level, presence of the risk factors and past medical history). There was significant association between heart score and all study variable .

The Association between Heart score and Final Result, Table 5 shows the association between heart score and final results after 6 weeks of follow up including (Acute myocardial infarction, death, Percutaneous coronary intervention or continue medical treatment and continue normal life).

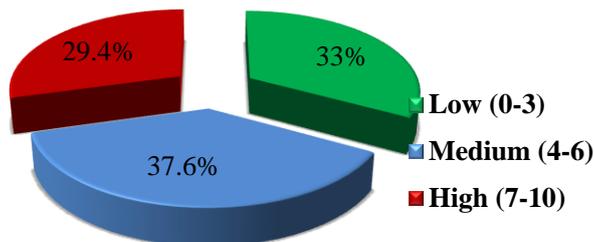
Distribution of patient according to socio – demographic characteristic and study variables

Socio-demographic variables & study variables	No.	%
Age		
< 45 years	69	24.5%
(45-60) years	118	41.8%
>60 years	95	33.7%
Total	282	100.0%
Gender		
Male	179	63.5%
Female	103	36.5%
Total	282	100.0%
Residence		
Urban	247	87.6%
Rural	35	12.4%
Total	282	100.0%
Occupation		
Employed	73	25.9%
Un employed	209	74.1%
Total	282	100.0%
Level of education		
Illiterate	73	25.9%
Primary or Secondary	98	34.8%
Higher education	111	39.3%
Total	282	100.0%
Physical activity		
Physically inactive	148	52.5%
Mild physical activity	134	47.5%
Total	282	100.0%
Troponin level		
< 0.5	90	31.9%
(0.5-2)	51	18.1%
>2	141	50.0%
Total	282	100.0%
ECG finding		
Change	164	58.2%
Not significant	52	18.4%
Normal	66	23.4%
Total	282	100.0%

Distribution of Patients According to Heart Score

Figure 1 shows the distribution of patients according to Heart score. (29.4%) of

patients presented with high risk score (7-10).



Distribution of patients according to heart score

Distribution of patients according to type of risk factors and past medical history

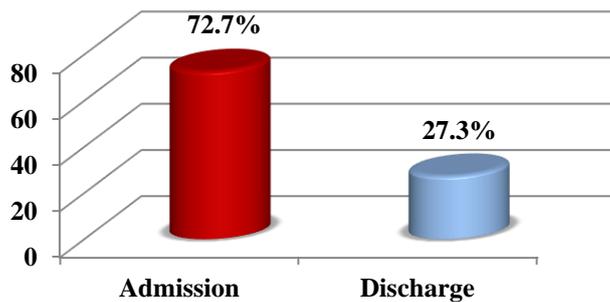
Study variables	No.	%
Type of risk factor		
Absent	116	41.1%
Hypertension	30	18.1%
Diabetes mellitus	6	3.6%
Stress (Acute or chronic)	27	16.3%
Un healthy diet	5	3.0%
Smoking	7	4.2%
Obesity	1	0.6%
2 or more from above factors	90	54.2%
Total	166	100.0%
Past medical history		
Negative	190	67.4%
Acute MI	56	60.9%
Percutaneous coronary intervention or coronary bypass graft	18	19.6%
Stroke	12	13.0%
More than one of above events	6	6.5%
Total	92	100.0%

- *RF : risk factor
- *MI :Myocardial infarction
- *PCI :Percutaneous coronary intervention
- *CABG: coronary bypass graft

Distribution of Patients According to Emergency Unit Staph Decision

Figure 2 shows the distribution of patients according to emergency unit staph

decision. Majority (72.7%) of patients were admitted to hospital.



Distribution of patients according to emergency unit staph decision

Association between heart score and study variables

Study variables	Heart score			χ^2	P-value
	High (7-10)	Medium (4-6)	Low (0-3)		
Gender					
Male	44 (53.0)	76 (71.7)	59 (63.4)	7.011	0.03*
Female	39 (47.0)	30 (28.3)	34(36.6)		
Total	83 (100.0)	106 (100.0)	93 (100.0)		
Residence					
Rural	21 (25.3)	12 (11.3)	2 (2.2)	21.808	<0.001*
Urban	62 (74.7)	94 (88.7)	91 (97.8)		
Total	83 (100.0)	106 (100.0)	93 (100.0)		
Occupation					
Not employed	81 (97.6)	74 (69.8)	54 (58.1)	37.353	<0.001*
Employee	2 (2.4)	32 (30.2)	39 (41.9)		
Total	83 (100.0)	106 (100.0)	93 (100.0)		
Educational level					
Illiterate	44 (53.0)	25 (23.6)	4 (4.3)	62.03	<0.001*
Primary and Secondary	27 (32.5)	35 (33.0)	36(38.7)		
Higher education	12 (14.5)	46 (43.4)	53 (57.0)		
Total	83 (100.0)	106 (100.0)	93 (100.0)		
Total	83 (100.0)	106 (100.0)	93 (100.0)		
Physical activity*					
No phy	57 (68.7)	57 (53.7)	30 (32.5)	19.714	<0.001*
Mild physical activity*	26 (31.3)	48 (45.3)	60 (63.5)		
Moderate*	0(0.0)	2(2.0)	3(4.0)		
Vigorous	83 (100.0)	106 (100.0)	93 (100.0)		
Total	83 (100.0)	106 (100.0)	93 (100.0)		

*p value ≤ 0.05 was significant.

Association between heart score and score elements.

Study variables	Heart score		χ^2	P-value	Odds ratio	95% CI
	High (7-10)	Medium or low(6 or less)				
Age						
> 60 years	54 (65.1)	41 (20.6)	51.82	<0.001*	7.176	4.07-12.65
60 or less years	29 (34.9)	158 (79.4)				
Total	83 (100.0)	199 (100.0)				
ECG						
Change	80 (94.4)	84 (42.2)	70.63	<0.001*	36.5	11.14-119.57
Not significant or normal	3 (3.6)	115 (57.8)				
Total	83 (100.0)	199 (100.0)				
Troponin level						
>2	79 (95.2)	62 (31.2)	96.03	<0.001*	43.64	15.29-124.5
2 or less	4 (4.8)	137 (68.8)				
Total	83 (100.0)	199 (100.0)				
Risk factors						
Present	70 (84.3)	96 (48.2)	31.51	<0.001*	5.77	3.004-11.11
Absent	13 (15.7)	103 (51.8)				
Total	83 (100.0)	199 (100.0)				

Past medical history						
Positive	61 (73.5)	31 (15.6)				
Negative	22 (26.5)	168 (84.4)	89.37	<0.001*	15.02	8.08-27.93
Total	83 (100.0)	199 (100.0)				

*p value ≤ 0.05 was significant.

Distribution of Patients According to Final Results

Figure 3.3 shows the distribution of patients according to final results after 6

weeks of follow up. Only (31.6%) of patients continue normal life after 6 weeks of follow up.

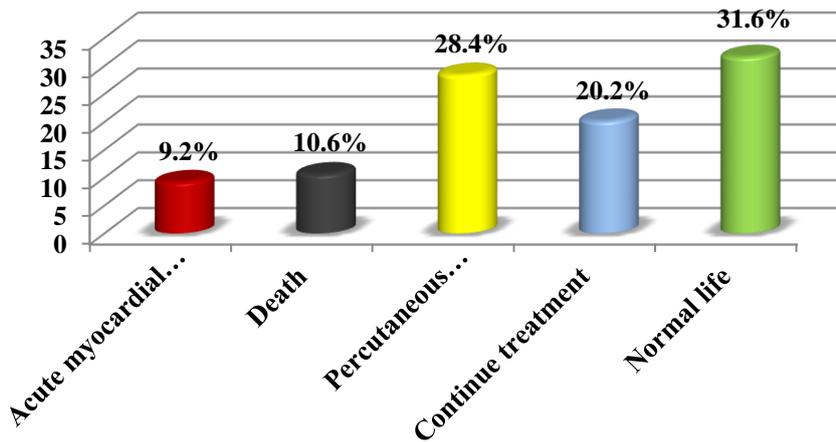


Figure 3: Distribution of patients according to final results after 6 weeks of follow up

Association between heart score and final results after 6 weeks of follow up

Study variable	Heart score			χ ²	P-value
	High (7-10)	Medium(4-6)	Low (0-3)		
Final result					
Acute myocardial infarction	25 (30.1)	5 (4.7)	0 (0.0)	263.24	<0.001*
Death	11 (13.3)	15 (14.1)	0 (0.0)		
PCI or continue medical treatment	47 (56.6)	82 (77.4)	8 (8.6)		
Normal life	0 (0.0)	4 (3.8)	85 (91.4)		
Total	83 (100.0)	106 (100.0)	93 (100.0)		

*p value ≤ 0.05 was significant.

*Myocardial Infarction

*PCI Percutaneous coronary intervention

Distribution of patients according to study variables

Study variable	(Means ± SD)			Range
	Total	Reach end point	Normal life or continue treatment	
Age (years)	(54.87 ± 17.83)	(60.21 ± 16.91)	(49.9 ± 17.28)	(18-112)
*BMI (Kg/m ²)	(26.31 ± 3.0)	(27.72 ± 2.83)	(24.99 ± 2.54)	(20.7-33.0)
Troponin level	(2.53 ± 1.96)	(3.65 ± 1.63)	(1.48 ± 1.65)	(0.0-6.0)
Heart score	(4.86 ± 2.67)	(6.56 ± 1.8)	(3.28 ± 2.36)	(0.0-10.0)

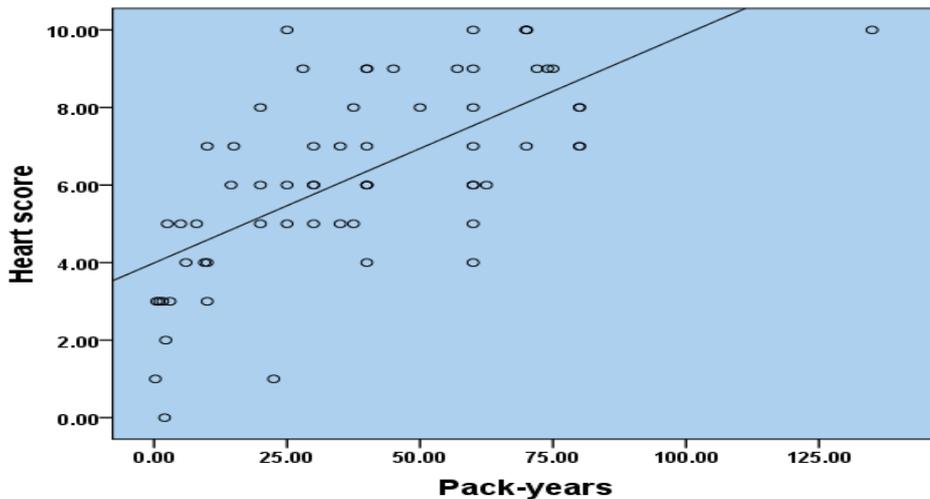
End point means (AMI, death and PCI)

BMI : body mass index

Correlation between Heart score and Pack years

Figure 3.4 shows the correlation between heart score and pack years. There was

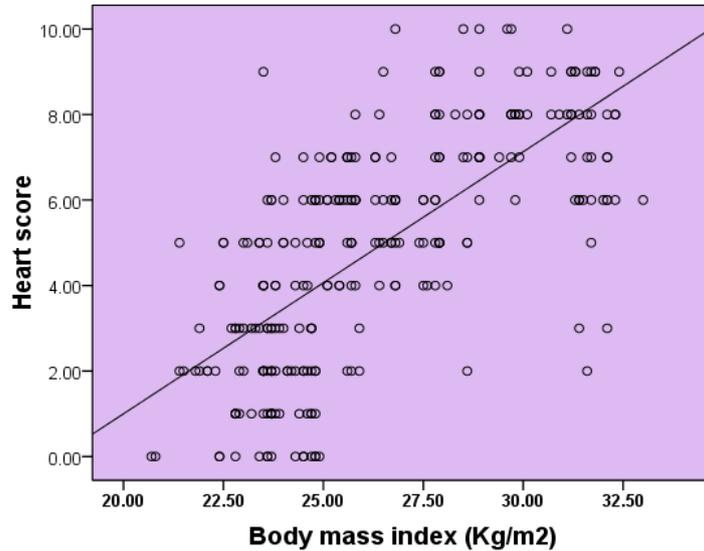
significant positive linear correlation between heart score and pack years (r= 0.672, P=<0.001).



Correlation between heart score and pack years.

Correlation between Heart score and Body Mass Index Figure 3.5 shows the correlation between heart score and body

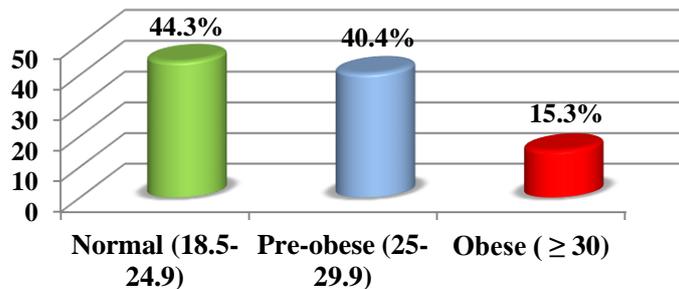
mass index. There was significant positive linear correlation between heart score and body mass index. (r= 0.69, P=<0.001)



Correlation between heart score and body mass index

Distribution of Patients According to BMI

Figure 1 shows the distribution of patients according to BMI. Only (15.3%) of patients were obese.



Distribution of patients according to BMI

Discussion

The patient who attended to ED that complain of chest pain doubt to treated by physicians. The decision is with less confidence to discharge patient without intervention. These discharge without or less intervention lead to bad prognosis, the attended to hospital which was not needed that lead to reverse result and a lot of money. The patient that attended to ED most of them male with young and middle Age group which are live in urban area & unemployed with mild physical Activity when we do S. troponin we found who had high level titer is critical one as we mention in result. When ECG done, we found that patients with normal ECG most of them with low risk for ACS. and can safety discharge them. Cohort study Heart Score in our people that indicate to strong influence. That use to identify Risk of

MACE in few minute .And we show that the Heart Score was divided in 2 group that one of them reach to End Point and the other not reach. The end point are Death, PCI, AMI that after fallow up for six week. Heart Score average \pm SD of 2 group was 6.56 ± 1.8 that for who reach to end point, and 3.28 ± 2.36 to not reach. In compare to other study, its 6.51 ± 1.84 without 3.71 ± 1.83 [16], the other study 7.2 ± 1.7 and without 3.8 ± 1.9 [17], The last one 6.54 ± 1.7 without 3.96 ± 2 [17] The heart score put the patients in three group low (0-3), medium (4-6) And high (7-10). For clinically important irreversible adverse cardiac events (MACE). In comparison with other study .the low heart score (0 -3) was (33%) of total patient and had (3.2%). When do comparison with other study for group who reach to endpoint 2.5% [16], 0.99 [17] and 1.7% [24]. Based on our

results. The medium heart score (4-6) was (37.6%) of total patients and had (60.4%) for reaching to end point MACE with comparison with other study, 20.3% [16], 11.6% [17] and 16.6% [23]. The high heart score (7-10) was (29.4 %) of total patient and had (83.1%) for reaching to end point to compare with other study 72% [16] 65.2% [17] and 50.1% [24] these findings have important practical importance. The ED evaluation of low risk patient with suspected ACS is characterized by high frequency, costs, and care variation [25]. Good prognosis value for low Heart Score (0-3) was 100% in comparison to other study 94% [26] and 98% [27]. We found most patient with chest pain had risk factor more than one and Hypertension is in top of the list as we mention in result .And about past medical history the top is the MI. In this study we compare between heart score element and it show that it's Higher with s. Troponin the odd ratio is (43.64) and lower with risk factor (5.77). There was a significant positive linear correlation between heart score and pack year and positive linear correlation between heart score and body mass index. There was a risk result to patient who smoke pack in day for long time & who had high BMI. Several scores was develop to help ED Physician in identifying patient complain of chest pain with a high risk of MACE who warrant more aggressive diagnostic and treatment strategies and those with low risk, who can be safely discharged. For this reason, the Heart score has been found to be a hopeful tool, outperforming more conventional risk scores, especially in low-intermediate risk population [17, 24]. In ED the 1st line of diagnosed patient with chest pain is ECG but it take time to done to patient with chest pain more than ten minute. so an effort to decrease this time, that to identify serious cases in ED and To decrease time that needed for PCI especially in STEMI. after 6 week follow up of patient with chest pain . patient with high score (7-10) reach to endpoint more than low score (0-3). where most patient with low score (0-3) live with normal life The end result of

study of good investigation of patients with chest pain that attended to ED was effective. A significant reduction in the number of cases of AMI, which would not have been diagnosed by the usual investigation model, has been one of the most important results obtained [28, 29].

Conclusion

Chest pain is most common cause that lead patient attended to ED and that pain is duo to many causes some are life threaten and some not .for decrease the cost, and good diagnosis and decrease uses of coronary care unit CCU bed so that need do the necessary management to patient that complain of chest pain. S. Troponin level should be done as fast as possible and it help for Heart Score detection The good confidence decision will done with Heart Score in ED and not need Invasive intervention The Heart Score is so simple, fast and dependable judgment for prognosis to patient with chest pain and could be used in triage HAERT score is help both patient and doctor in ED by this score we will try to improve the low Score 0-3 could be discharge with no or less complication and It will decrease staining of patient in ER & decrease intervention with patient.

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