



Shendi University



Faculty of postgraduate study and Scientific Research

**Nurse's performance regarding immediate
management of patients with acute myocardial
infarction in Khartoum state (2018)**

**A research submitted in partial fulfillment of the
requirement for the degree of master in critical care of
nursing science**

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الآية

قال تعالى:

﴿ يَا أَيُّهَا الَّذِينَ آمَنُوا إِذَا قِيلَ لَكُمْ تَفَسَّحُوا فِي الْمَجَالِسِ فَافْسَحُوا يَفْسَحَ اللَّهُ لَكُمْ وَإِذَا

قِيلَ انشُرُوا فَانشُرُوا يَرْفَعِ اللَّهُ الَّذِينَ آمَنُوا مِنْكُمْ وَالَّذِينَ أُوتُوا الْعِلْمَ دَرَجَاتٍ وَاللَّهُ بِمَا

تَعْمَلُونَ خَبِيرٌ ﴿ 11 ﴾

صدق الله العظيم

سورة المجادلة الآية (11)

Dedication

To the beloved people in my life

To our mother

To our great fathers

Who cared, love and inspired us to seek success

To our brothers, sister and friends

Acknowledgement

Thanks to Allah Firstly and Lastly.

I would like to thanks all those who helped me during the study period.

And special thanks Shendi University Faculty of Postgraduate studies.

My Supervisor.Dr.Fathia Osman Makki Assist.Prof Medical Surgical Nursing Khartoum University, Faculty of Nursing.

A special thanks also to all Nursing Staff in Sudan Heart Institute, Omdurman Military Hospital.

ABSTRACT

Background: acute myocardial infarction is cardiac disorder result from the interruption of blood supply to a part of the heart muscle, causing heart cells to die. And when the pt not having immediate medical and proper nursing intervention become much higher risks to death.

Objectives: This study aimed at assessment nurses' performance regarding immediate management of patient with acute myocardial infarction at Khartoum state

Methods: A descriptive study was used in SHI and Omdurman military hospital. Relevant data were collected by standardized structured questionnaire from 90 nurses (participants) in the cardiac care units (CCU) and emergency department during the period from Des 2017 to May 2018 .Data processed using the statistical package for social sciences (SPSS).

Results: The study enrolled 90 nurses. About 81% of the participants had good level of knowledge in management of acute myocardial infarction; while 19 % of the study sample had poor knowledge. By testing the demographic data (qualification, years' experience)that effect the competence components, it (knowledge, practice and attitude) in CCU and emergency department had insignificant effect.

Conclusion: the study concluded that have good knowledge, practice and fair attitude for management of AMI.

مستخلص البحث

المقدمة:

احتشاء عضلة القلب هو اضطراب في القلب، ينتج بسبب اختلال التغذية الدموية لجزء من عضلة القلب مما يسبب موت خلاياها وإذا لم يتلقى المريض عناية طبية انية وتدخل ترميزي سريع تصبح حياته في خطر.

الاهداف: هدفت هذه الدراسة الي تقييم الاداء التمريضي نحو المعالجة الفورية لمريض احتشاء عضلة القلب الحاد في ولاية الخرطوم.

المنهجية: اجريت هذه الدراسة الوصفية بمستشفى السلاح الطبي ومعهد السودان للقلب تم جمع البيانات باستخدام استمارة استبيان اشتملت عينة الدراسة علي عدد 90 ممرض وممرضة في وحدة العناية المكثفة وقسم الطوارئ لفترة من (ديسمبر 2017م الي مايو 2018م). تم تحليل البيانات بواسطة برنامج الحزمة الاحصائية للعلوم الاجتماعية .

النتائج: 81% من افراد العينة كانت معلوماتهم جيدة حول معالجة مريض احتشاء عضلة القلب. 19% كان لديهم نقص في المعلومات وعدم كفاءة في العمل التمريضي حول المعالجة. وكانت العلاقة بين سنوات الخبرة والمؤهل التعليمي غير مؤثران في المعلومات والعمل التمريضي والتعامل.

الخلاصة: اشارت الدراسة الي جودة المعلومات وكفاءة الأداء وقبول التعامل تجاه مريض احتشاء عضلة القلب.

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Abbreviations:

IHD ischemic heart diseases

ACS acute coronary syndrome

UA unstable angina

NSTEMI Non-ST-segment elevation myocardial infarction

STEMI ST-segment elevation myocardial infarction

AMI acute myocardial infarction

CCU intensive care unit

ER emergency room

AACN American Association of critical – nurses

WHO world health organization

ECG: Electrocardiograph

PCI: Percutaneous Coronary Angioplasty

SPSS: Statistical Package for Social Sciences

GTN nitro glycosides

PT prothrombin time

INR international normalized ratio

APTT activated partial thromboplastin time

EBP evidence base practice

SHI Sudan heart institute

Chapter one
Introduction

Chapter One

Introduction

1.1 Introduction:

Cardiovascular disease remains a major healthcare problem and one of the most consumers of the public health resources. Ischemic heart diseases (IHD) remain the commonest cause of death all over the world [1].while 114.000people in UK are admitted to hospital with acute coronary syndrome(ACS) annually[2]

ACS is composed of unstable angina (UA), non-ST –segment elevation myocardial infarction(STEMI) [3, 4, 5]

Acute myocardial infraction is emergency requiring immediate diagnosis and treatment: itis caused by complete blocked of the coronary artery due to a thrombus attached to a ruptured plaque. In some instance acute myocardial infarction (AMI) occurs due to physiologic stress [5, 6, 7].

Also there are a number of risk factors known to predispose to the AMI, high blood pressure, highcholesterol levels,diabetes,obesity,smoking, age, family history. It is important that patients presenting with acute myocardial treated promptly [8].

SO initial therapy should focus on stabilizing the ptcondition, relieving ischemic pain and providing antithrombotic [9, 10, 11].Complications may occur immediate following the heart attack form may need a time to develop[12]

The goals of clear are to master any potential life-threatening complications for instance ventricular fibrillation and minimize the time to reperfusion. [13].

Contemporary approaches to the diagnosis and treatment of acute coronary syndromes have revolutionized the role of the nurse in the coronary care unit. No longer solely the agent of the physician's orders,

today's coronary care unit nurse intimately works with the physician and other allied health technical personnel to help stabilize patients initially, to guide them through the early phases of therapy, to help them understand their disease, and to educate them as to their medications. In the process, the nurse gauges patient progress, is mindful of recurrent myocardial ischemia and alerts others to its presence, identifies complications of thrombolytic therapy and PTCA, is alert to potentially malignant rhythm disturbances, and finally is the advocate of patient rehabilitation. Thus, the coronary care unit nurse plays a great role in the modern care of the patient with a myocardial infarction and materially contributes to patient recovery.[14]

According to measurement criteria of American Association of Critical-Care Nurses (AACN) acquires and maintains current Knowledge and competency in the care of acutely and critically ill patients. The nurse participates in participates own nursing practice in relation to professional practice standards,institutional guidelines,rules,and regulation to identifying areas of strength as well as areas where in learning activities to acquire and refine the knowledge and skills needed to care and seek learning opportunities that reflect evidence-based practice in order to maintain clinical skills and competencies. So the nurse engages in self-assessment and formal performance appraisal on a regular basis professional development would be beneficial [15.16].

The overall prevalence of MI in the US is around 2.8% in adults aged 20 years or over. The estimated incidence is 550,000 new and 200,000 recurrent MIs annually. According to American Heart Association estimates, every 42 seconds an American will have an MI. In 2013, 116,793 deaths in the US were due to MI, and of these around 57% were in males and 43% were in females. MI affects both men and women, but tends to occur at a younger age in men. The incidence in women

increases after the menopause. The average age of a person having a first MI is 65.1 years for men and 72 years for women. [17]

Worldwide, about 15.9 million myocardial infarctions occurred in 201[18]. More than 3 million people had an ST elevation MI and more than 4 million had an NSTEMI.[19] STEMI occur about twice as often in men as women.[20] About one million people have an MI each year in the United States.[21] In the developed world the risk of death in those who have had an STEMI is about 10%.[22] Rates of MI for a given age have decreased globally between 1990 and 2010.[23] In 2011, AMI was one of the top five most expensive conditions during inpatient hospitalizations in the US, with a cost of about \$11.5 billion for 612,000 hospital stays.[24].

National socioeconomic characteristics in various countries, the severity of acute coronary syndrome, and the subsequent management are to blame as the primary causes of the differences in the clinical presentation and outcome in coronary syndrome [25, 26].

Sudan is taking about 2% of the earth's surface with economic, social, and ethnic diversity. Furthermore cardiac care centers are lacking and mainly focused in the Capital of the country, there is poverty of staff trained in cardiac care, and transportations either insufficient in outreaching underserved areas or overcrowded with marked traffic congestion in the major cities, thus, we conducted this research to study the pattern of acute coronary syndrome in Omdurman Teaching Hospital in Sudan to see whether the above-mentioned differences and barriers to coronary care affect the presentation and outcome of acute coronary syndrome patient.[27]

1.2 Research Question

- How nurse's performance is has effect on management of acute myocardial infarction?

1.3 Justification

- Critical illness requires life-saving intervention of high technology medicine and intensive nursing within a specialist critical care unit[28]. An acute myocardial infarction is an emergency requiring immediate diagnosis and treatment.
- The important of nurse's knowledge, practice, attitude regarding the management of AMI.
- Nursing performance has become controversial issue in healthcare settings around the world, as it affects many aspects of the nursing profession, including education, practice and management.

1.4 Objectives

1.4.1 General objective

To study nurse performance regarding patient with acute myocardial infarction.

1.4.2 Specific objective:

- To assess nurses knowledge regarding for management of AMI.
- To determined nurses practice regarding for management of AMI.
- To I identify nurses attitude regarding for management of AMI.
- To association the relation between nurses performance (knowledge, practice and attitude) with selective demographic data (experience and qualifications).

Chapter Two
Literature review

Chapter two

Literature review

2.1 Myocardial Infarction

Acute myocardial infarction is emergency requiring immediate diagnosis and treatment: it is caused by complete blocked of the coronary artery due to a thrombus attached to a ruptured plaque. In some instance acute myocardial infarction (AMI) occurs due to physiologic stress [5].

2.2 Pathophysiology

Prolonged ischemia due to an imbalance between oxygen supply and oxygen demand causes irreversible cell damage and muscle death. Although multiple factors can contribute to the imbalance between oxygen supply and oxygen demand, coronary artery thrombosis characterizes most infarctions. Plaque rupture is believed to trigger the development of the thrombus in most patients with myocardial infarction. Irreversible damage to the myocardium can begin as early as 20 to 40 minutes after interruption of blood flow. However, the dynamic process of infarction may not be completed for several hours.

Necrosis of tissue appears to occur sequentially (ie, cellular death first occurs in the subendocardial layer and then spreads throughout the thickness of the heart wall). Transmural infarction is an infarction that produces necrosis that extends through all the layers of the myocardium. If the area of the transmural infarction is small, the damaged myocardium may become dyskinetic (ie, unable to contract in a coordinated fashion). If the area of infarction is more extensive, the damaged myocardium may become akinetic (ie, unable to contract at all). As a result, cardiac output is compromised.

Most myocardial infarctions affect the left ventricle, although infarctions can also occur in the right ventricle or in both ventricles. The larger the

area of infarction, the greater the impact on ventricular function. Several factors determine the size of the infarction, including:

- The extent, severity, and duration of the ischemic episode
- The metabolic demands of the myocardium at the time of the event
- The size of the occluded vessel
- The amount of collateral circulation (ie, smaller arteries that under normal conditions carry very little of the blood flow but, in the presence of an occlusion, enlarge and dilate over time, creating an alternate route for blood flow)
- Vascular tone
- The status of the intrinsic fibrinolytic system

2.3 Signs and symptoms:

Chest pain is the most common symptom of acute myocardial infarction and is often described as a sensation of tightness, pressure, or squeezing. Pain radiates most often to the left arm, but may also radiate to the lower jaw, neck, right arm, back, and upper abdomen.[31] The pain most suggestive of an acute MI, with the highest likelihood ratio, is pain radiating to the right arm and shoulder.[32] Similarly, chest pain similar to a previous heart attack is also suggestive.[31] The pain associated with MI is usually diffuse, does not change with position, and lasts for more than 20 minutes.[33] Levine's sign, in which a person localizes the chest pain by clenching one or both fists over their sternum, has classically been thought to be predictive of cardiac chest pain, although a prospective observational study showed it had a poor positive predictive value.[34] Pain that responds to nitroglycerin does not indicate the presence or absence of a myocardial infarction.[35]

Chest pain may be accompanied by sweating, nausea or vomiting, and fainting,[33] [31] and these symptoms may also occur without any pain at all.[29] In women, the most common symptoms of myocardial infarction

include shortness of breath, weakness, and fatigue.[36] Shortness of breath is a common, and sometimes the only symptom, occurring when damage to the heart limits the output of the left ventricle, with breathlessness arising either from low oxygen in the blood, or pulmonary edema.[29][37] Other less common symptoms include weakness, lightheadedness, palpitations, and abnormalities in heart rate or blood pressure.[38] These symptoms are likely induced by a massive surge of catecholamines from the sympathetic nervous system, which occurs in response to pain and, where present, low blood pressure.[39] Loss of consciousness due to inadequate blood flow to the brain and cardiogenic shock, and sudden death, frequently due to the development of ventricular fibrillation, can occur in myocardial infarctions.[40] Cardiac arrest, and atypical symptoms such as palpitations, occur more frequently in women, the elderly, those with diabetes, in people who have just had surgery, and in critically ill patients.[33]

"Silent" myocardial infarctions can happen without any symptoms at all. These cases can be discovered later on electrocardiograms, using blood enzyme tests, or at autopsy after a person has died. Such silent myocardial infarctions represent between 22 and 64% of all infarctions, and are more common in the elderly,[41] in those with diabetes mellitus[42] and after heart transplantation. In people with diabetes, differences in pain threshold, autonomic neuropathy, and psychological factors have been cited as possible explanations for the lack of symptoms.[43] In heart transplantation, the donor heart is not fully innervated by the nervous system of the recipient.[44]

2.4 Risk factor:

The most prominent risk factors for myocardial infarction are older age, actively smoking, high blood pressure, diabetes mellitus, and total cholesterol and high-density lipoprotein levels.[45] Many risk factors of

myocardial infarction are shared with coronary artery disease, the primary cause of myocardial infarction, with other risk factors including male sex, low levels of physical activity, a past family history, obesity, and alcohol use.[38] Risk factors for myocardial disease are often included in risk factor stratification scores, such as the Framingham risk score.[46] At any given age, men are more at risk than women for the development of cardiovascular disease.[47]High levels of blood cholesterol is a known risk factor, particularly high low-density lipoprotein, low high-density lipoprotein, and high triglycerides.[48]

Many risk factors for myocardial infarction are potentially modifiable, with the most important being tobacco smoking (including secondhand smoke).[38] Smoking appears to be the cause of about 36% and obesity the cause of 20% of coronary artery disease.[49] Lack of physical activity has been linked to 7–12% of cases.[49][50] Less common causes include stress-related causes such as job stress, which accounts for about 3% of cases,[49].

2.5 Role of nurse in management of MI:

2.5.1 Nursing Assessment:

One of the most important aspects of care of the patient with MI is the assessment.

Assess for chest pain not relieved by rest or medication.

Monitor vital signs, especially the blood pressure and pulse rate.

Assess for presence of shortness of breath, dyspnea, tachycardia, and crackles.

Assess for nausea and vomiting.

Assess for decrease urinary output.

Assess for the history of illnesses

Performe a precise and complete physical assessment to detect complication and change in the patient status.

Assess IV sites frequently.

2.5.2 Diagnosis:

Based on the clinical manifestations, history, and diagnostic assessment data, major nursing diagnoses may include:

Ineffective cardiac tissue perfusion R/TO reduced coronary blood flow

Risk for ineffective peripheral tissue perfusion R/TO cardiac output from left ventricular dysfunction.

Deficient knowledge R/TO post –MI self-care rate

2.5.3 Planning & goals:

To establish a plan of care, the focus should be on the following:

Relief of pain or ischemic signs and symptoms.

Prevent of myocardial damage.

Absence of respiratory dysfunction.

Maintenance or attainment of adequate tissue perfusion.

Reduce anxiety.

Absence or early detection of complications.

Chest pain absent/controlled.

Heart rate/rhythm sufficient to sustain adequate cardiac output/tissue perfusion.

Achievement of activity level sufficient for basic self-care.

Anxiety reduced/managed.

Disease process, treatment plan, and prognosis understood.

Plan in place to meet needs after discharge.

2.5.4 Nursing priorities:

Relieve pain, anxiety.

Reduce myocardial workload.

Prevent/detect and assist in treatment of life –threatening dysrhythmias or complications.

Promote cardiac health, self-care.

2.5.5 Nursing interventions:

Administer oxygen along with medication therapy to assist with relief symptoms.

Encourage bed rest with the backrest elevated to help decrease chest discomfort and dyspnea.

Encourage changing of positions frequently to help keep fluid from pooling in the bases of the lungs.

Check skin temperature and peripheral pulses frequently to monitor tissue perfusion.

Provide information in an honest and supportive manner.

Monitor the patient closely for changes in cardiac rate and rhythm, heart sounds, blood pressure, chest pain, respiratory status, urinary output, change in skin color, and laboratory values.[51]

2.6 Initial Management:

- Administer aspirin, 160–325 mg chewed[52] and an antiplatelet, anticoagulant, is given as a loading dose with the goal of reducing the clot size and reduce further clotting in the affected artery.[29][52] Platelets are one of the main components in thrombus formation when a coronary plaque is disrupted, and aspirin diminishes platelet aggregation.[50] It is known to decrease mortality associated with acute myocardial infarction by at least 50%.[53]

2.6.1 Side effect of aspirin:

Common side effect:

Vomiting, stomach pain, heartburn, drowsiness, nausea. serious side effect include:

ringing in the ears, loss of hearing, swelling of the (eyes, face, lips, tongue, or throat, wheezing or breathing difficulties, clammy skin, bloody vomit, bright red blood in stools. [54]

2.6.2 Contraindication:

Related to the risk of bleeding, use of alcohol increases the chance for stomach bleeding, bleeding disorder such as hemophilia, gastrointestinal issues such as peptic ulcers. [55]

After recording the initial 12-lead ECG, place the patient on a cardiac monitor and obtain serial ECGs. The 12-lead ECG is central in the decision pathway for the diagnosis and treatment of the patient. Continuous cardiac monitoring is used to detect dysrhythmias and to monitor ST-segment changes.[52]

Give oxygen by nasal cannula and apply a pulse oximeter. If severe pulmonary edema is present and the patient is in respiratory distress, intubation may be necessary.

Pulmonary edema often causes hypoxemia in patients with myocardial infarction.[52]

Administer sublingual nitroglycerin (unless the systolic blood pressure is less than 90 mm Hg or the heart rate is less than 50 or greater than 100 beats/min). Nitroglycerin (given under the tongue or intravenously) may improve the blood supply to the heart, and decrease the work the heart must do. It is an important part of therapy for its pain relief, despite there being no benefit to give overall mortality.[29][56]

Give 0.4 mg every 5 min for a total of three doses. IV nitroglycerin is recommended for patients with acute myocardial infarction with persistent pain, for control of hypertension, or for management of pulmonary congestion. Sublingual nitroglycerin helps to promote vasodilation (but is relatively ineffective in relieving pain in the early stages of a myocardial infarction. [52]

2.6.3 Side effects:

Headache, dizziness, flushing, nausea, reflex tachycardia. [57]

2.6.4 Contraindications:

Sensitivity to nitrate medications, hypotensive children under 12 years old, experiencing increase pressure, severe anemia. [58]

Provide adequate analgesia with morphine sulfate (2–4 mg IV; doses can be repeated every 5 min until the pain is relieved). [52]

Morphine is the drug of choice to relieve the pain of a myocardial infarction. Morphine may also be used, and is effective for the pain associated with STEMI.[29] The evidence for benefit from morphine on overall outcomes, however, is poor and there is some evidence of potential harm.[59][60]

2.6.5 Side effect:

Nausea, vomiting, drowsiness .impaired judgment, coordination, constipation, dryness of the mouth. [61]

Contraindication: significant respiratory depression, acute or severe bronchial asthma, paralytic ileus, hypersensitivity.[62]

Administer -adrenergic blocker. During the first few hours after the onset of ST-segment elevation myocardial infarction (STEMI), -adrenergic blockers may diminish myocardial oxygen demand by reducing heart rate, systemic arterial pressure, and myocardial contractility.[52]

2.6.6 Common side effect:

diarrhea; stomach cramps, nausea, vomiting.

2.6.7 Serious side effect include; lupus erythematosus, serious allergic reactions, bronchospasm.

2.6.8 Important side effect: insomnia, blurred vision, rash, hair loss, weakness.[63]

2.6.9 Contraindication: bradycardia, second or third degree heart block, asthma, diabetes patients prone to hypoglycemia unawareness. [64].

Administer low-molecular-weight heparin i.v. bolus: 60u.kg with maximum of 4000u [30].side effect (hemorrhage such as nosebleed,

blood in your urine or stool, black or tarry stool) and hypersensitivity. Contraindication (sever thrombocytopenia, in whom suitable blood coagulation tests and an uncontrollable active bleeding, DIC and hypersensitive to heparin.[65]

Administration of streptokinase 1.5million units in 100ml of 5%dextrose or 0.9% saline over 30-60 min for 24 to 48.side effect hypotension, bleeding and skin rash.

2.6.10 Absolute contraindications:

- Hemorrhagic stroke or stroke of unknown origin at any time
- Ischaemic stroke in preceding 6 months
- Central nervous system damage or neoplasms
- Recent major trauma/surgery/head injury (within preceding 3 weeks)
- Gastro-intestinal bleeding within the last month
- Known bleeding disorder
- Aortic dissection

2.6.11 Relative contraindications:

- Transient ischaemic attack in preceding 6 months
- Oral anticoagulant therapy
- Pregnancy or within 1 week post-partum
- Non-compressible punctures
- Traumatic resuscitation
- Refractory hypertension (systolic blood pressure >180 mm Hg)
- Advanced liver disease
- Infective endocarditis
- Active peptic ulcer.[66]

Antiplatelet (eg, Clopidigrel (Plavix) is administered for a minimum of 3 months following the placement of a bare metal stent and up to 12 months following a drug-eluting stent placement.[52].

Chapter Three
Methodology

Chapter three

Methodology

3.1 Research Design:

This is a Descriptive cross sectional hospital based one.

3.2 Study setting:

The study was conducted in two hospitals in Khartoum state (Sudan Heart institute, Omdurman military hospital).

3.3 Study area:

SHI: location in Africa Street from west, and face Albalabilstreet from south. SHI is the only institute in Sudan, which is fully dedicated to cardiovascular disease. From the time of its inception in the year 2000 and until now, SHI has strived to provide state of the art patient care and treatment. In addition to training of doctors, nurses, technologists, SHI encompasses Sudan heart center, which provides medical and surgical care to heart patient from all over the country it contain ICU, CCU, CATHLAP , ER and General ward.

Omdurman military hospital in section Alyaa Hospital: located in Omdurman before Omdurman Bridge from Omdurman side. It contain ICU, CCU, CCR, ER and General ward.

3.4 Study period:

The duration of study will be from December 2017 to May 2018 in period 2018 at cardiac care units and emergency department.

3.5 Study population:

Any nurse working in SHI and Omdurman military hospital in CCU and ER with different levels of education

3.6 Inclusion criteria

All nurses in emergency department who work in study area directly with patient during period of study.

3.7 Exclude criteria

- Nurses in other department in hospital
- Nurses in vacation
- Not willing to participate

3.8 Sample size and sampling technique:

The study enrolled 90 nurses from the study population by random sampling.

3.9 Data collection tools:

Close ended, standardized structured questionnaire used. Composed of The questionnaire consisted of 26 questions that covered the following domain [6 questions] demographic data,[14 questions] knowledge,[3questions]attitude and[3questions] how to practice. Most questions were multiple choices. Each question item scoring from good to satisfy to poor modified based on multiple Liker scale [29].

Rational scaling (good,satisfy, or poor knowledge):

Good knowledge for more or equal 75 percent

Satisfy knowledge for more or equal 50 percent

Poor knowledge for less than 50 percent

3.10 Data collection technique:

The data was collected during 4 weeks, during all shifts, after the purpose of the study was explained to the participant every nurse's were allowed enough time to fill the questionnaire.

3.11 Data analysis:

The data will be collected it coded and transferred in to a specially designed formats so as to be suitable for computer feeding by using the

software statistical package for social science SPSS version (19), following data entry, checking and verification process will be carried out to avoid any errors during data entry. Frequency analysis, cross tabulation, figure and manual revision were used to detect any errors descriptive statistics, frequency, and percentage, chi-square and correlation will be used. Statistical computer software program was used for the data analysis; and excel Microsoft program used for graphs. The analysis reflects the competency among the study population. Firstly assesses each variable of knowledge, attitude and practice individually, and then compute these variables to give core level of these three items. Data was presented in figures, which included level of knowledge, practice and attitude and tables included cross tabulations and linear regression relationship.

3.12 Ethical consideration:

Approval letter is going to obtain from university of Shendi.

Permission was taken from hospital authority.

Informal consent is going to take from participants after explanation.

Chapter Four
Results

Chapter Four

Results

Table (1): distribution of demographic data n=90

<i>Variable</i>	<i>Frequency</i>	<i>Present</i>
<i>Age</i>		
20 – 30 years	71	78.9%
31 – 40 years	19	21.1%
<i>Gender</i>		
Male	32	35.6%
Female	58	64.4%
<i>Years of experience</i>		
1 + yrs	32	35.6%
4 – 6 yrs	43	47.8%
- 6 yrs	15	16.7%
<i>Working of experience</i>		
CCU	32	35.6%
ER	52	57.8%
Both	6	6.7%
<i>Qualification</i>		
Diploma	5	5.6%
BSC	79	87.8%
MSC	6	6.6%
<i>Training</i>		
Never	22	24.4%
One Twice	46	51.1%
Three or more	22	24.4%

Table (1) 90 persons were participate in this study; all participant fall in age between 20 to 40 years the most frequent group was between 20-30 which represent 78.9% of patients. 58(64.4 %) were female while 32(36%) were male. According to years of experience is about 32 (64.6%) for less that I years 43 (47.90%) in 4 to 6 years and15 (16.7%) for more than 6 years. As for the working and the percentage of CCU were 32 (35.6%) ER 52 (57%) and both that 6 (6.7%). Regarding The qualifications most of them had BSC (86.7.%). The percentage of training

is 29.9% that never do training, 51% that did it once twice while 24.4% that did it three or more.

Table 2: Association between experience and qualifications with knowledge

Variables		Experience			P.VA LUE	Qualifications				P.VAL UE
		>4	4-6	<6		Diploma	BSC	MSC	PhD	
Symptoms of MI	chest pain	6	7	1	0.31	1	12	1	0	0.48
	shortness of breath	0	1	0		1	0	0	0	
	Sweating	1	0	0		0	1	0	0	
	more than one answer	25	35	14		3	65	5	1	
The chest pain of MI	Crushed	0	1	0	0.99	1	0	0	0	0.05
	Prolong	1	2	1		2	2	0	0	
	Heaviness & tightness	7	11	2		0	18	2	0	
	Sever	3	4	1		0	8	0	0	
	more than one answer	2 1	25	1 1		2	50	4	1	
The pain is radiated	Arm & shoulder	7	11	5	0.30	2	20	1	0	0.13
	Neck	0	4	0		1	3	0	0	
	posterior-capsular	1	0	1		0	2	0	0	
	more than one answer	2 4	27	9		2	52	5	1	
Risk factor of MI	Smoking	2	3	1	0.52	1	5	0	0	0.06
	Hyperlipidemia & obesity	1	1	0		0	2	0	0	
	DM & hypertension	2	1	0		0	3	0	0	
	family history	0	1	0		1	0	0	0	
	ALL the Above	2 7	37	1 4		3	68	6	1	
The diagnostic measures confirm MI	12 lead ECG	2	5	1	0.95	0	8	0	0	0.27
	cardiac enzymes	2	6	0		1	7	0	0	
	angiography	1	1	0		0	2	0	0	
	Echocardiography	0	0	1		1	0	0	0	
	more than	2	31	1		3	61	6	1	

	one answer	7		3					
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Table (3) Association between experience and qualifications with practice

Variables		Experience			P.VA LUE	Qualifications				P.VA LUE
		>4	4-6	<6		diploma	BSC	MSC	PhD	
Immediate management when patients to ER:	put patient in cardiac bed	2	3	0	0.47	0	5	0	0	0.33
	give IV morphine	1	3	1		2	2	1	0	
	administration of oxygen therapy	2	1	0		0	3	0	0	
	connect monitor and ECG	2	2	0		0	4	0	0	
	more than one answer	25	34	14		3	64	5	1	
Pain management:	put patient on comfortable position	5	2	0	0.30	1	6	0	0	0.10
	give IV morphine	3	6	1		1	9	0	0	
	supplemental oxygen	2	0	0		0	2	0	0	
	nitroglycerosides (GTN)	1	1	0		0	2	0	0	
	more than one answer	21	34	14		3	59	6	1	
The drug can be given when patient arrive:	aspirin&clopidogrel	4	5	1	0.41	1	8	1	0	0.68
	Nitrate	2	2	0		0	4	0	0	
	morphin&antiemetic	1	0	1		0	2	0	0	
	ALL the above	25	36	13		4	64	5	1	

Table 4: Association between experience and qualifications with attitude

Variables		Experience			P.VA LUE	Qualifications				P.VA LUE
		>4	4-6	<6		Diploma	BSC	MSC	PhD	
Response to pain include: Response to pain include:	agree finding of pain	0	1	0	0.58	0	1	0	0	0.28
	assessment of pain	7	10	2		1	18	0	0	
	immediate given of medication	3	3	1		0	7	0	0	
	more than one answer	22	29	12		4	52	6	1	
	agree finding of pain	0	1	0		0	1	0	0	
Alarm of monitor:	response to alarm	1	6	1	0.92	2	6	0	0	0.06
	identify cause of alarm	5	3	1		0	9	0	0	
	managemen t to alarm	4	6	2		0	12	0	0	
	Ignore	0	0	1		0	1	0	0	
	more than one answer	22	28	10		3	50	6	1	
Anxiety of patient:	cool down	0	2	0	0.82	0	2	0	0	0.10
	Ignore	0	0	2		1	1	0	0	
	managemen t of anxiety	9	10	1		1	19	0	0	
	call the doctor	0	1	1		0	2	0	0	
	more than one answer	23	30	11		3	54	6	1	

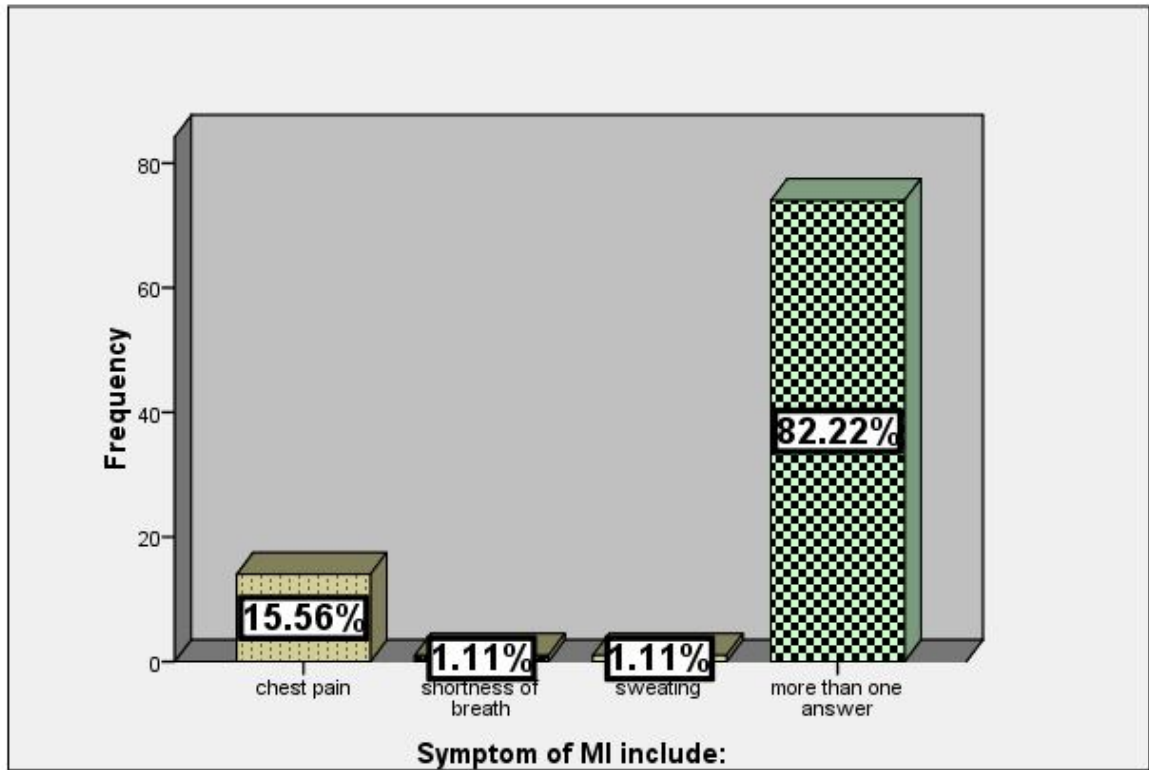


Figure (1). Distribution of participants' knowledge regarding symptom of MI. (n=90)

Show majority of nurses had good knowledge represent (82.2%), poor knowledge represent (15.6%, 1.1%1.1%).

The chest pain of MI characterized by:

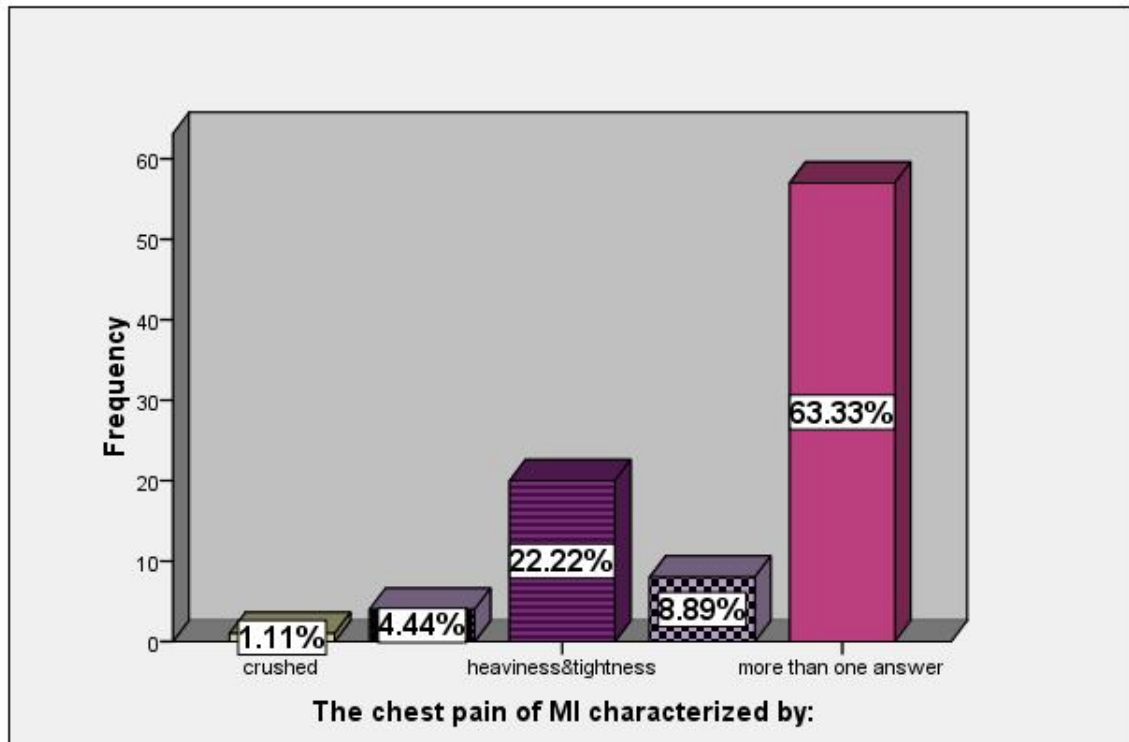


Figure (2): distribution of participant's knowledge regarding chest pain of MI characterized. (n=90)

Show majority of nurses had satisfy knowledge represents (63.3%), poor knowledge represent(1.1%,4.4%,22.2,8.9).

The pain is radiated to:

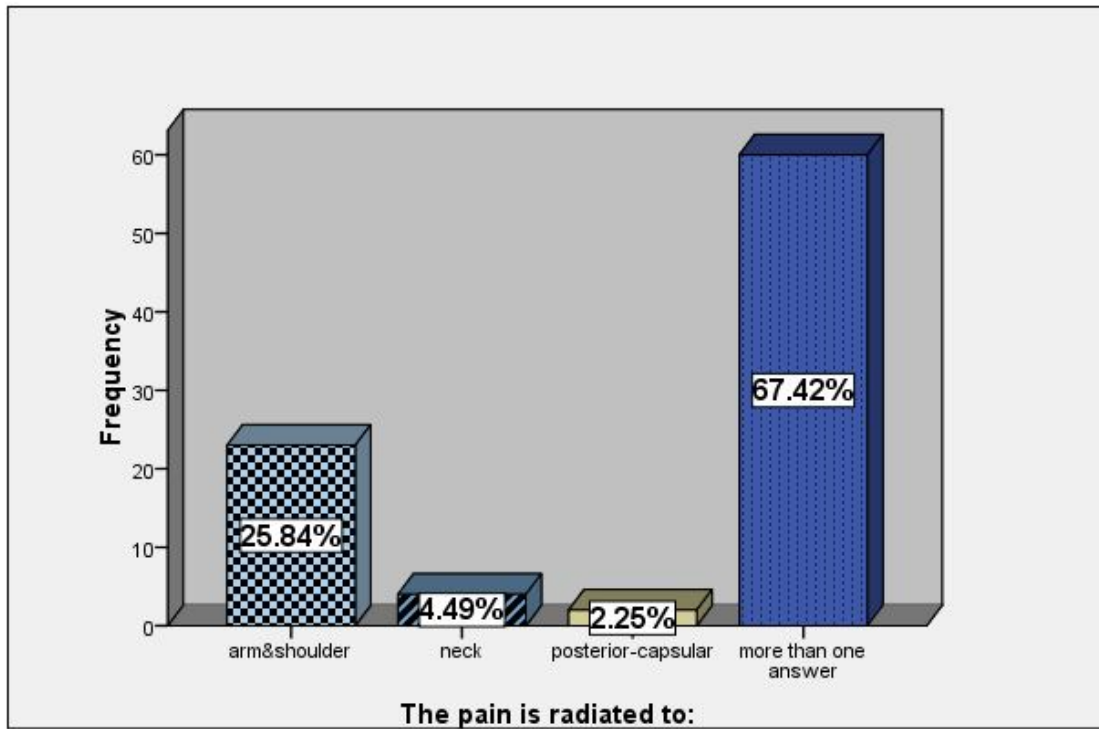


Figure (3): distribution participants' knowledge about the pain is radiated (n=90).

Show majority nurses of satisfy knowledge represents' (66.7%), poor knowledge represent (25.6%, 4.4%, 2.2%).

Risk factor of MI include:

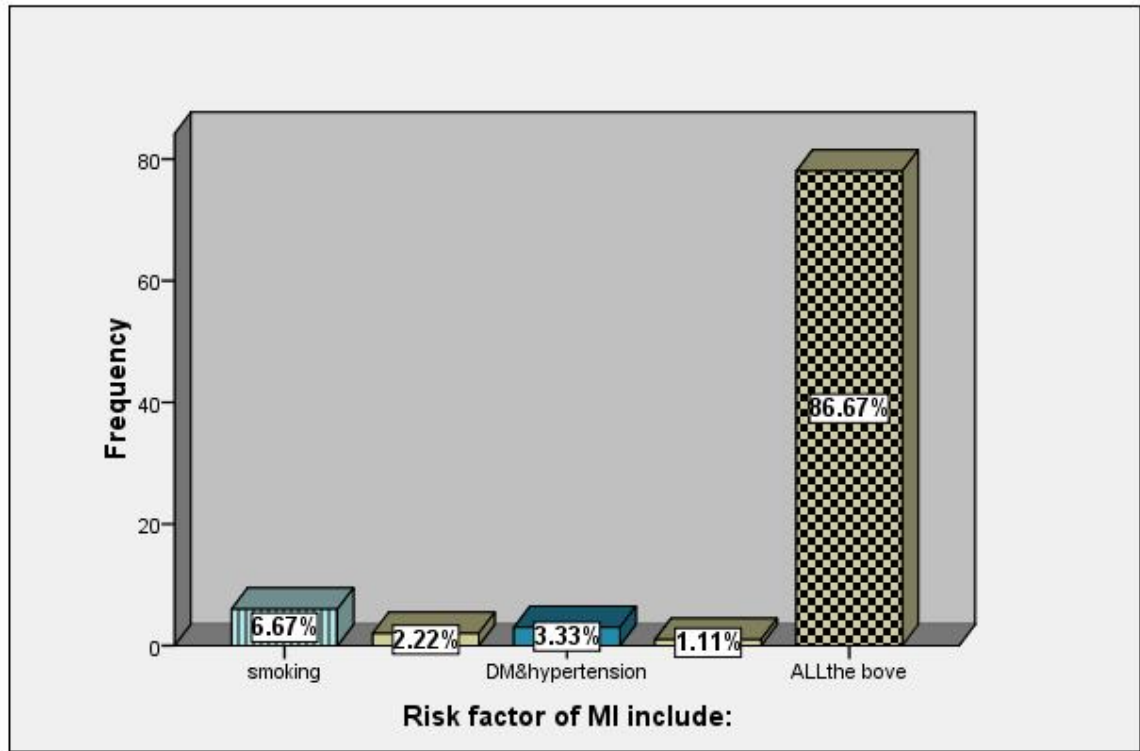


Figure (4): distribution of participants' knowledge regarding the risk factors of MI. (n=90)

Show majority of nurses had good knowledge represents (86.7%). poor knowledge represent (6.7%, 3.3%, 2.2%, and 1.1%).

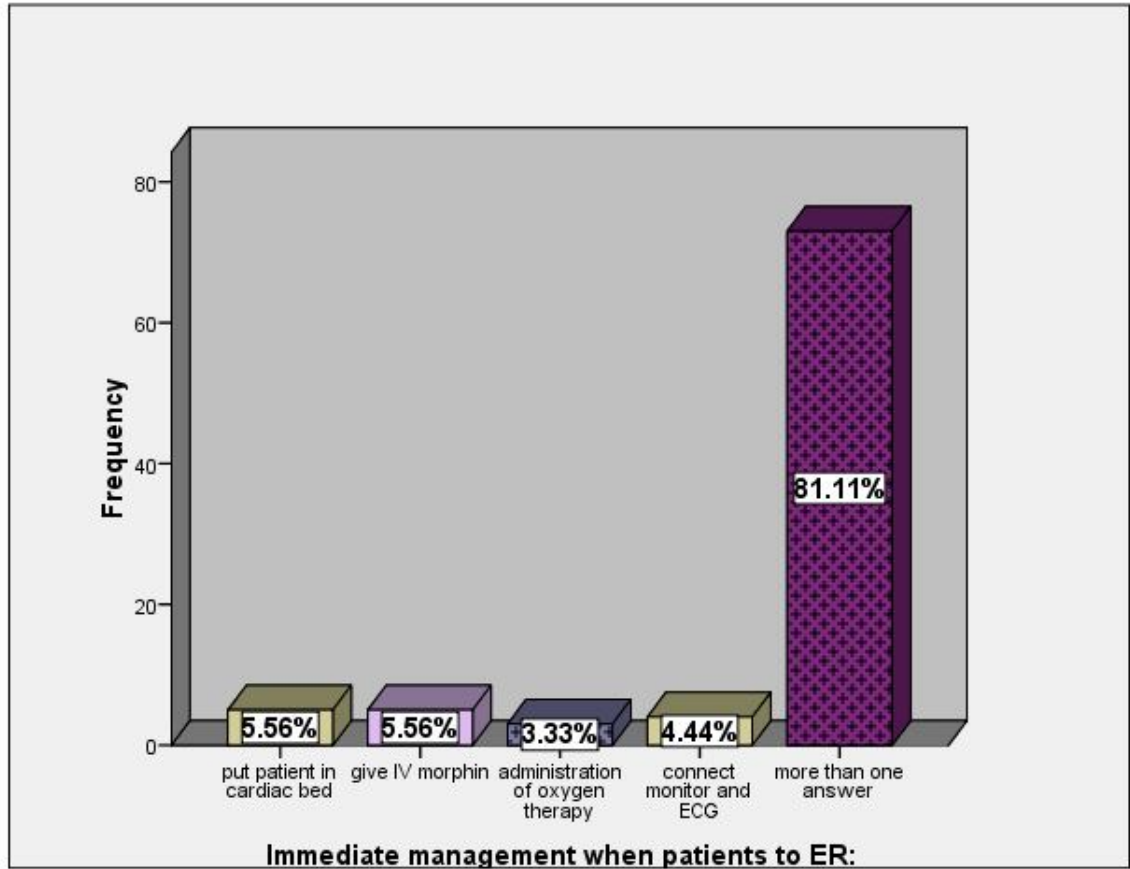


Figure (5): distribution of participants practice regarding immediate management when patient to ER. (n=90)

Show majority of nurses had good practice represents (81.1%). poor knowledge represent (5.6%, 5.6%, 3.3%, and 4.4%).

Pain management includes:

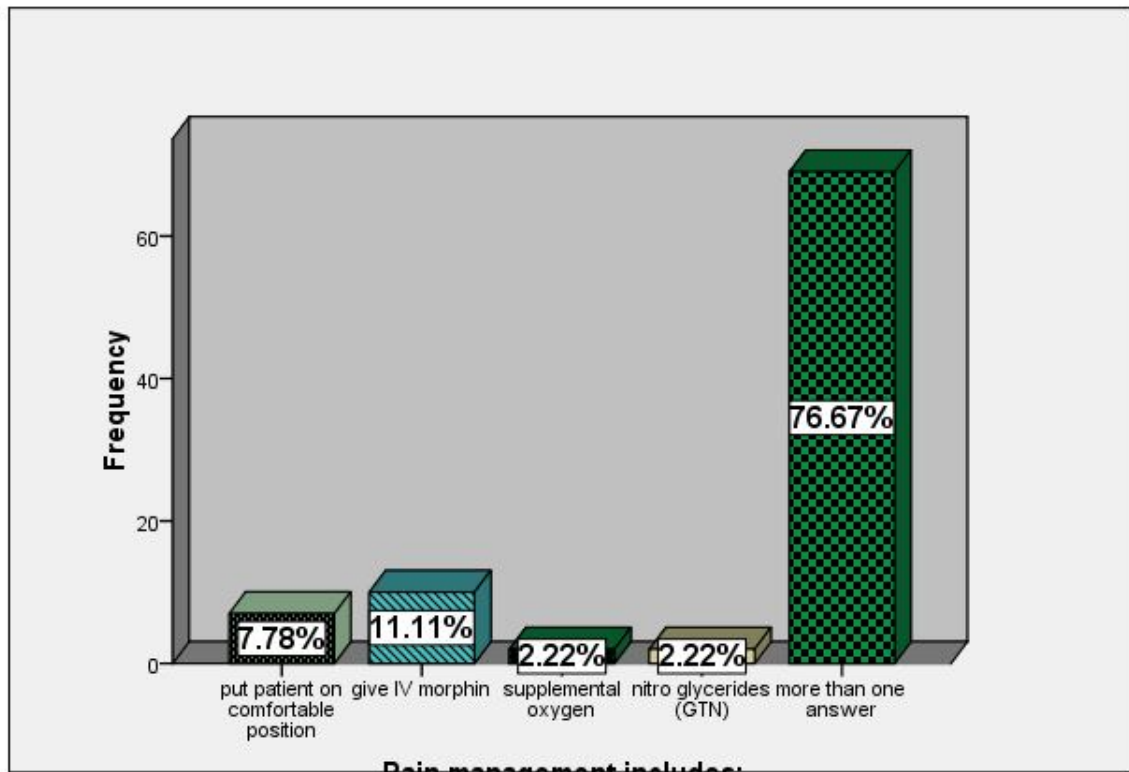


Figure (6): distribution of participants practice regarding pain management. (n=90)

Show majority of nurses had good knowledge represents (76.6%). poor knowledge represent (7.8%, 11.1%, 2.2%, 2.2%).

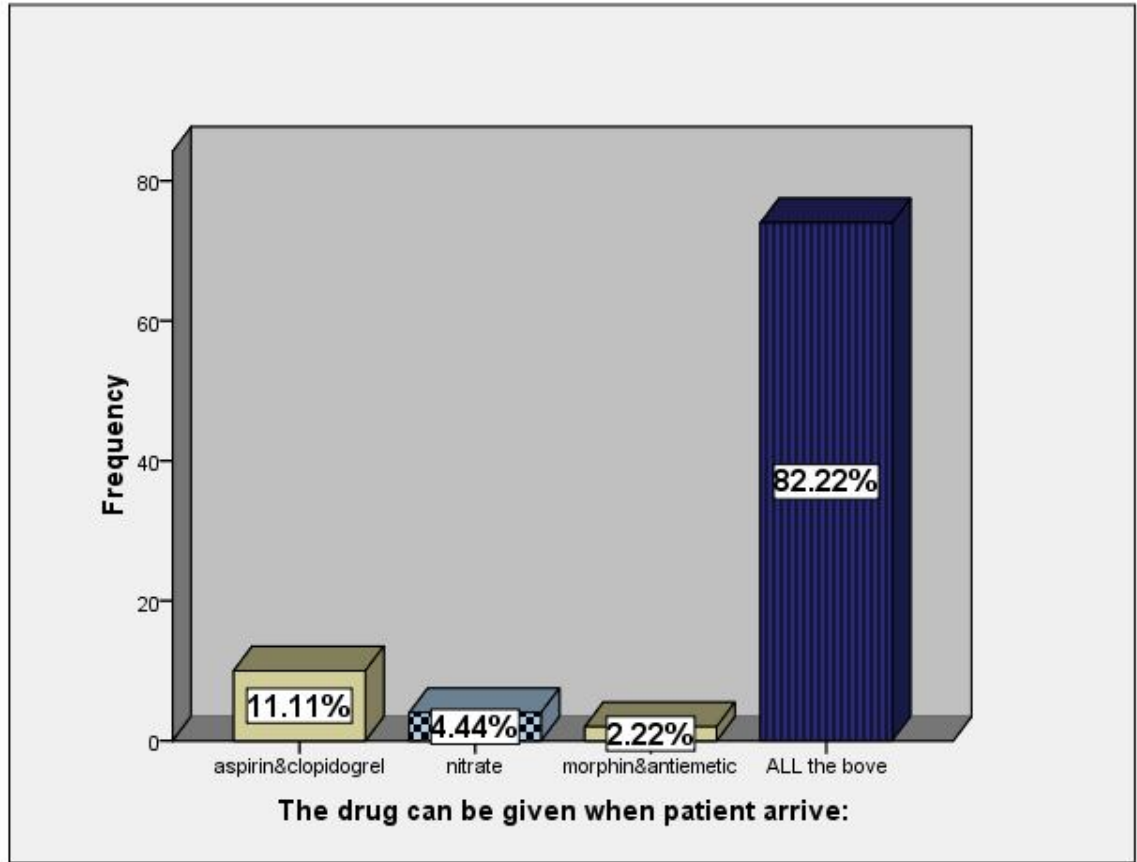


Figure (7): distributing of participants practice regarding drug can be given when patient arrive. (n=90)
Show majority of nurses had good practice represents (82.2%), poor knowledge represent (11.1%.4.4%, 2.2%).

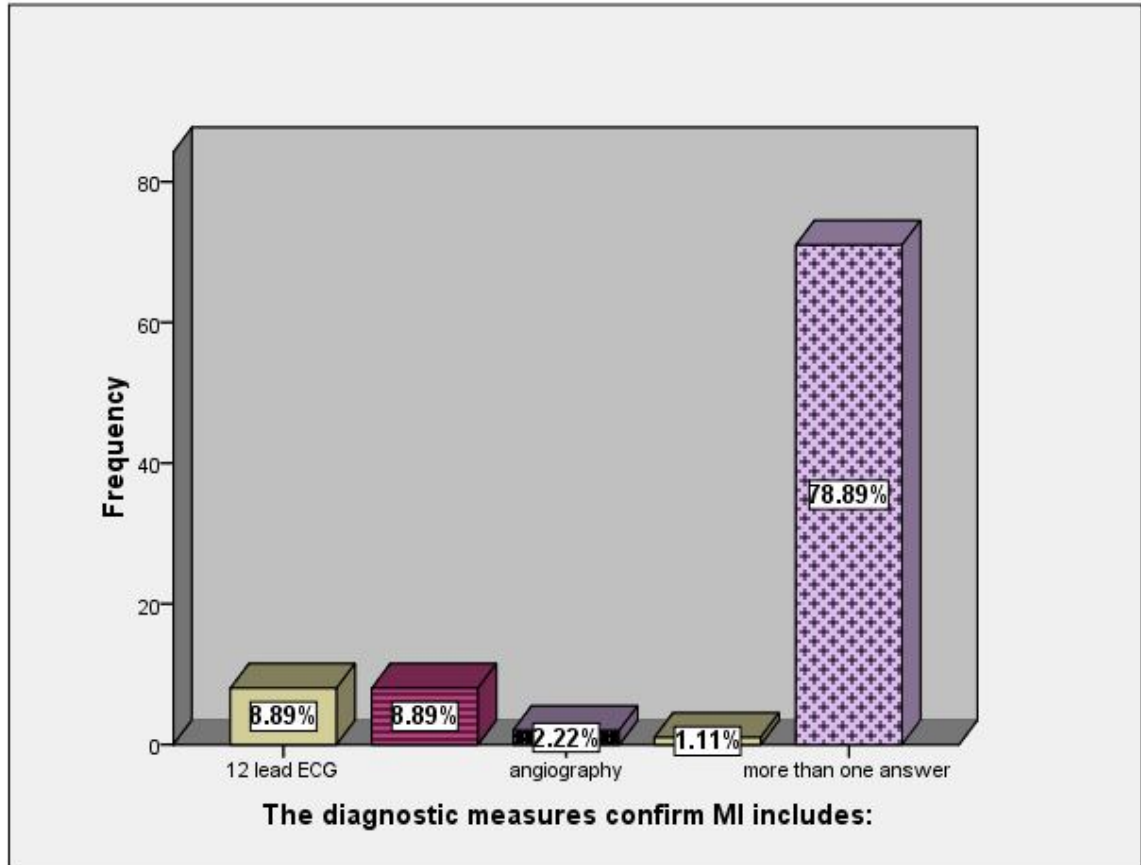
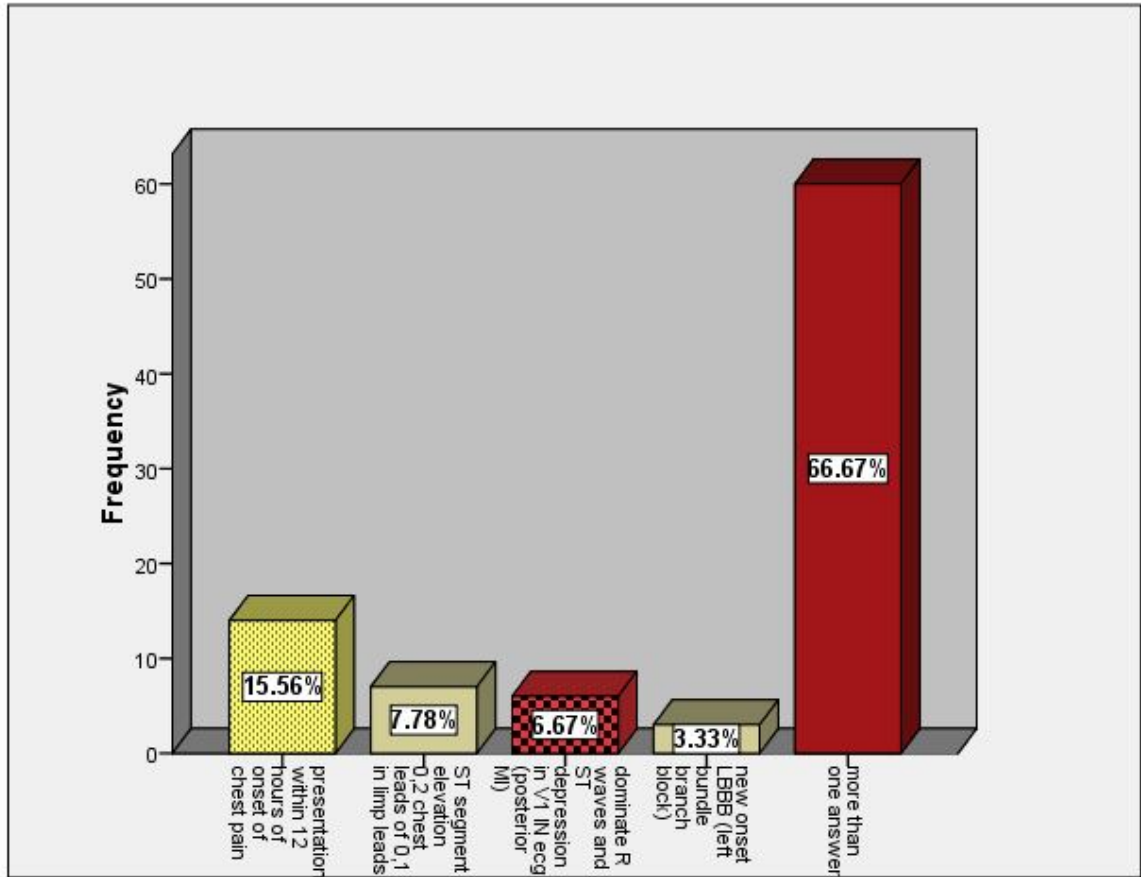


Figure (8): distributions of participant knowledge regarding diagnostic measure confirm MI. (n=90)

Show majority of nurses had good knowledge represents (78.9%). poor knowledge figure 8 represent (8.9%, 8.9%, 2.2%, and 1.1%).



Figure(9) Distribution of participant knowledge regard typical indication for immediate thrombolytic therapy for acute MI (n=90)
 Show majority of nurses had satisfy knowledge represents (66.7%). poor knowledge represent (15.6%, 7.8%, 6.7%, and 3.3%).

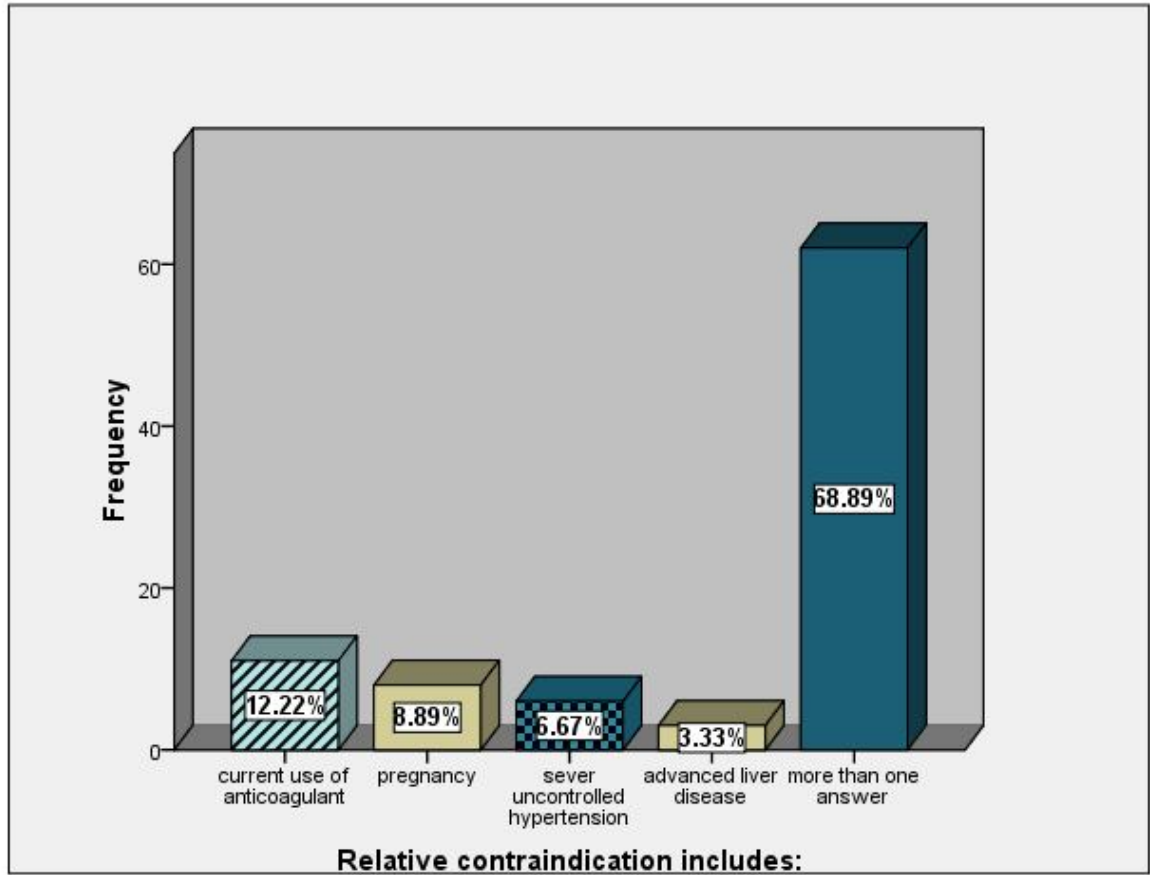


Figure (10): distribution of participants' knowledge regarding relative contraindication. (n=90)

Show Majority of nurses had satisfy knowledge represents (68.2%). poor knowledge represent (12.2%, 8.9%, 6.7%, and 3.3%)

Golding hours of streptokinase administration include:

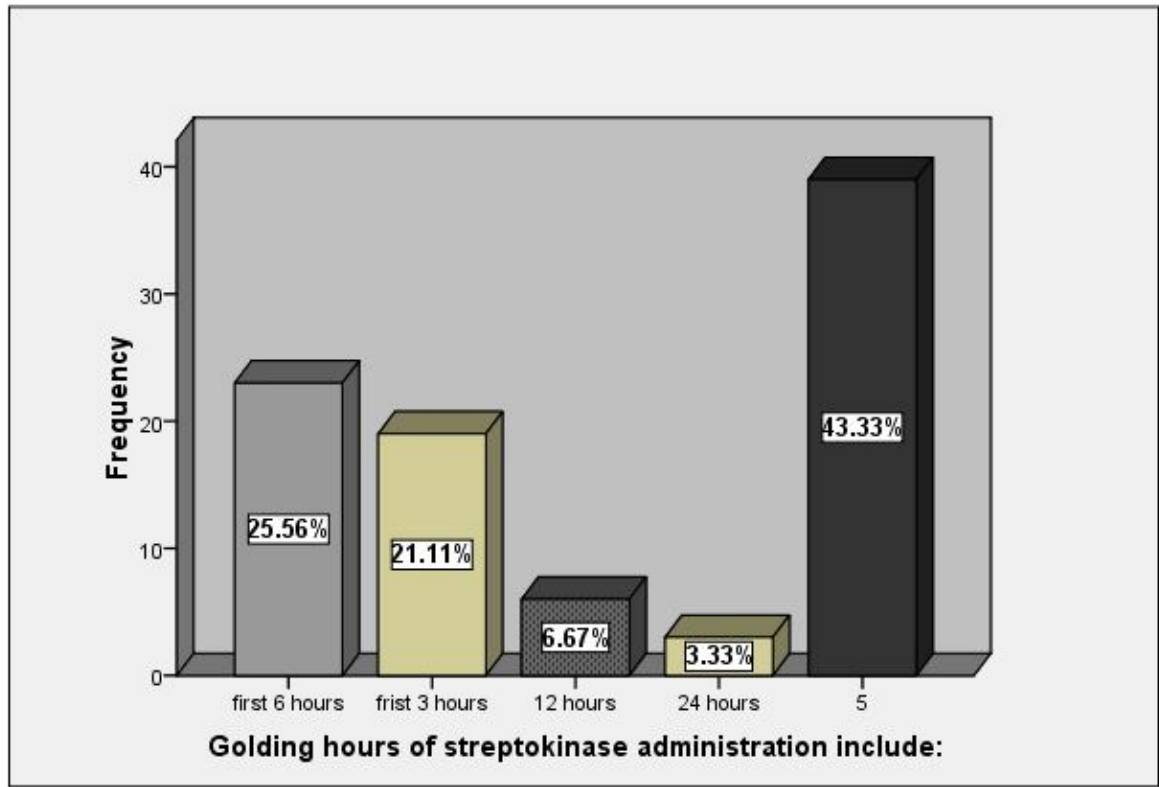


Figure (11): distribution of participant's knowledge regarding Golding hours of STK administration (n=90)

Show majority of nurses had poor knowledge represents (43.3%, 25.6%.21.1%, 6.7%, 3.3%).

Absolute contraindication of thrombolytic therapy includes:

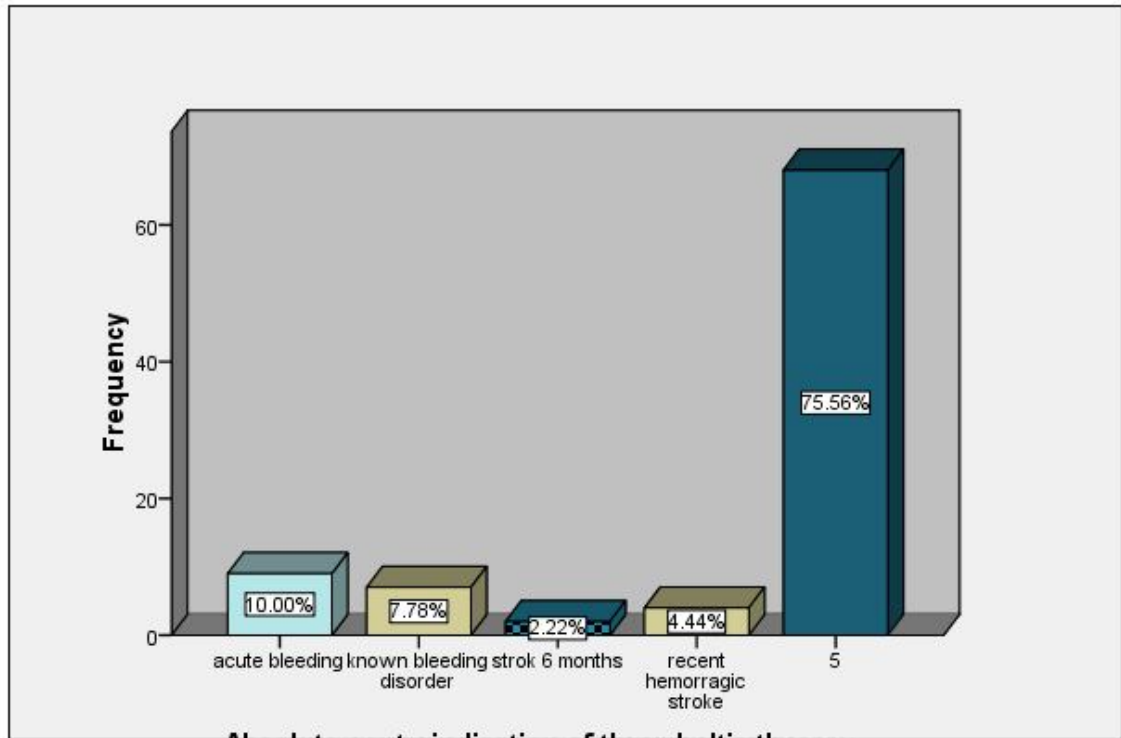


Figure (12): distribution of participant's knowledge regarding absolute contraindication of thrombolytic therapy. (n=90)

Show majority of nurses had good knowledge represents (75.6%).,poor knowledge represent(10%,7.8%,2.2%,4.4%).

Indication of administration of heparin include:

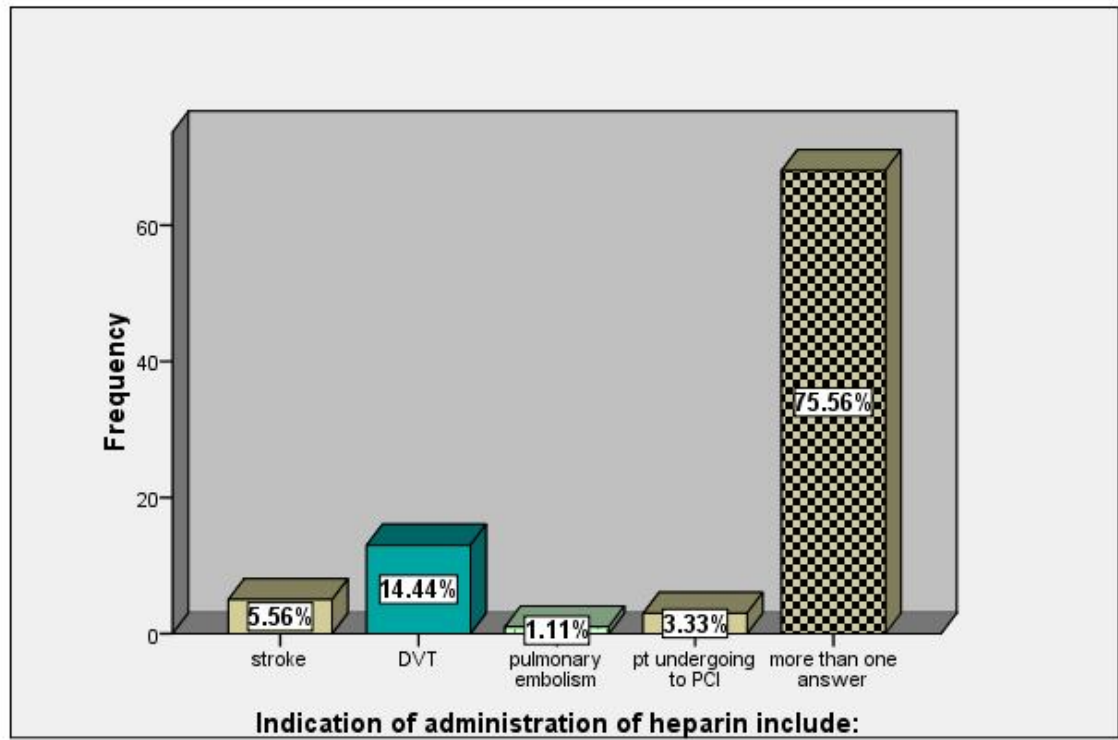


Figure (13): distribution of participant's knowledge regarding indication of administration of heparin. (n=90)

Show majority of nurses had good knowledge represents (75.6%).,poor knowledge represent(5.6%,14.4%,1.1%,3.3%)

Based laboratory examination on administration heparin in clude:

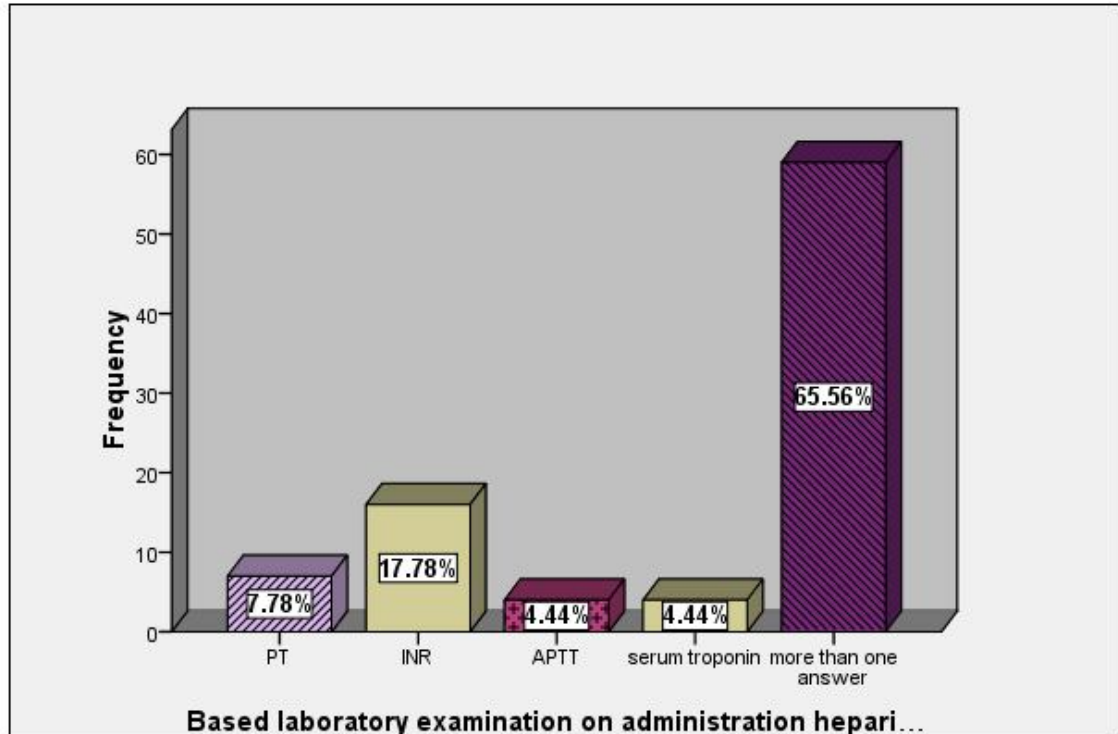


Figure (14): distribution of participants' knowledge regarding based laboratory examination on administration of heparin. (n=90)

Show majority of nurses had satisfy knowledge represents (65.6%), poor knowledge represent(7.8%,7.8%,17.8%,4.4% , 4.4%).

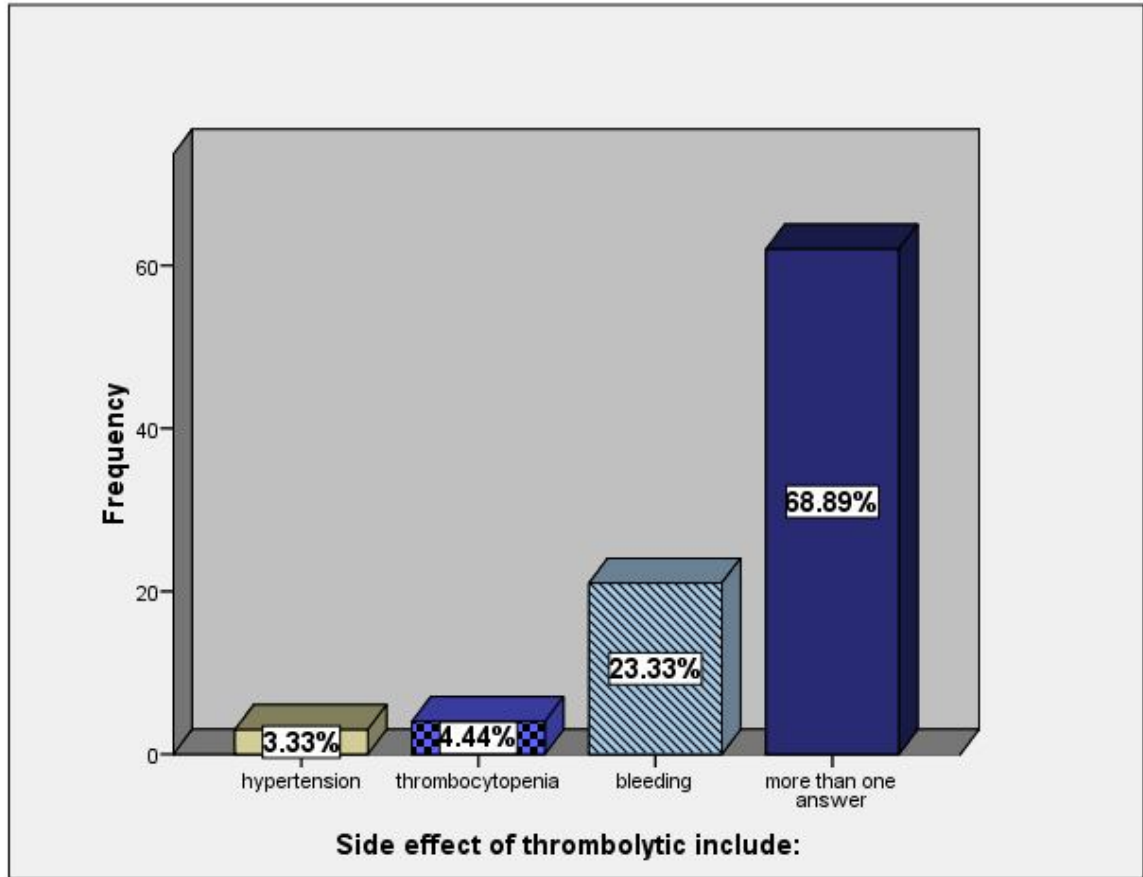


Figure (15): distribution of participants' knowledge regarding side effect of thrombolytic. (n=90)

Show majority of nurses had satisfy knowledge represents (68.9%)..poor knowledge represent(3.3%,4.4%,23.3%)

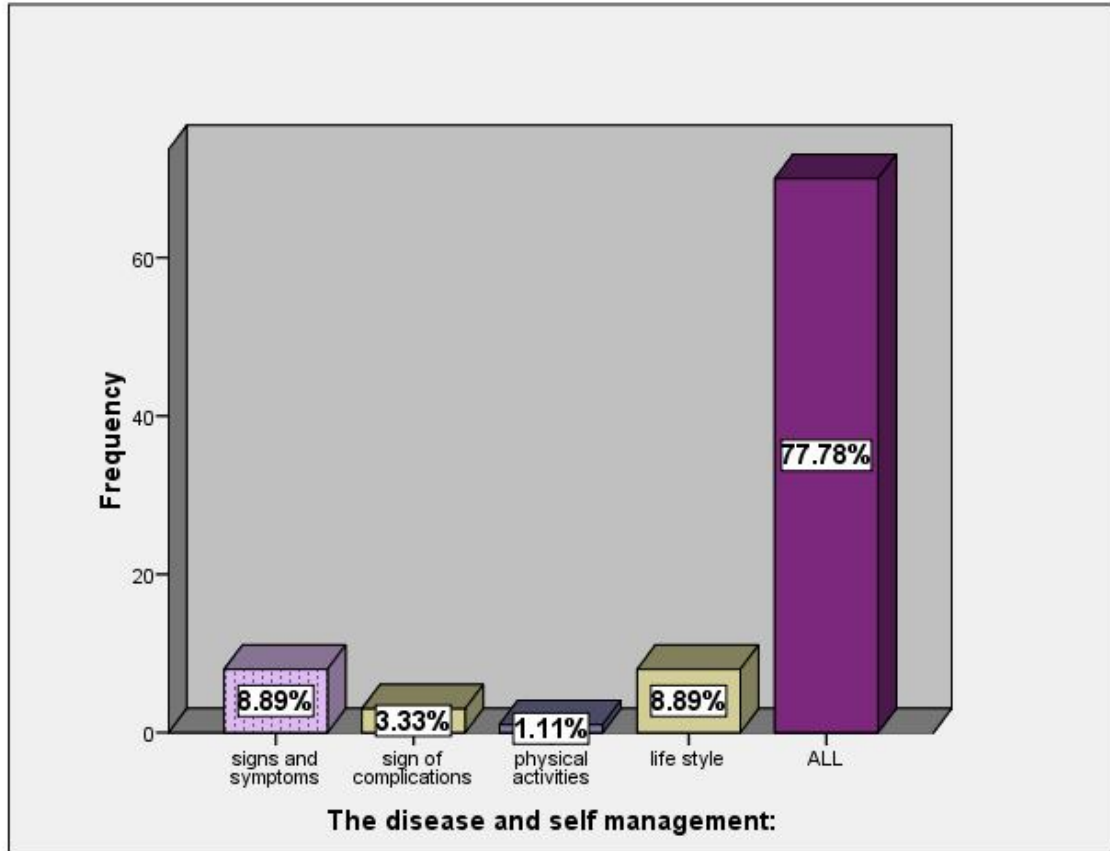


Figure (16): distribution of participants' knowledge regarding counseling should disease and self-management.

Show majority of nurses had good knowledge represents (77.8%).,poor knowledge represent(8.9%,8.9%,3.3,1.1%).

Treatment:

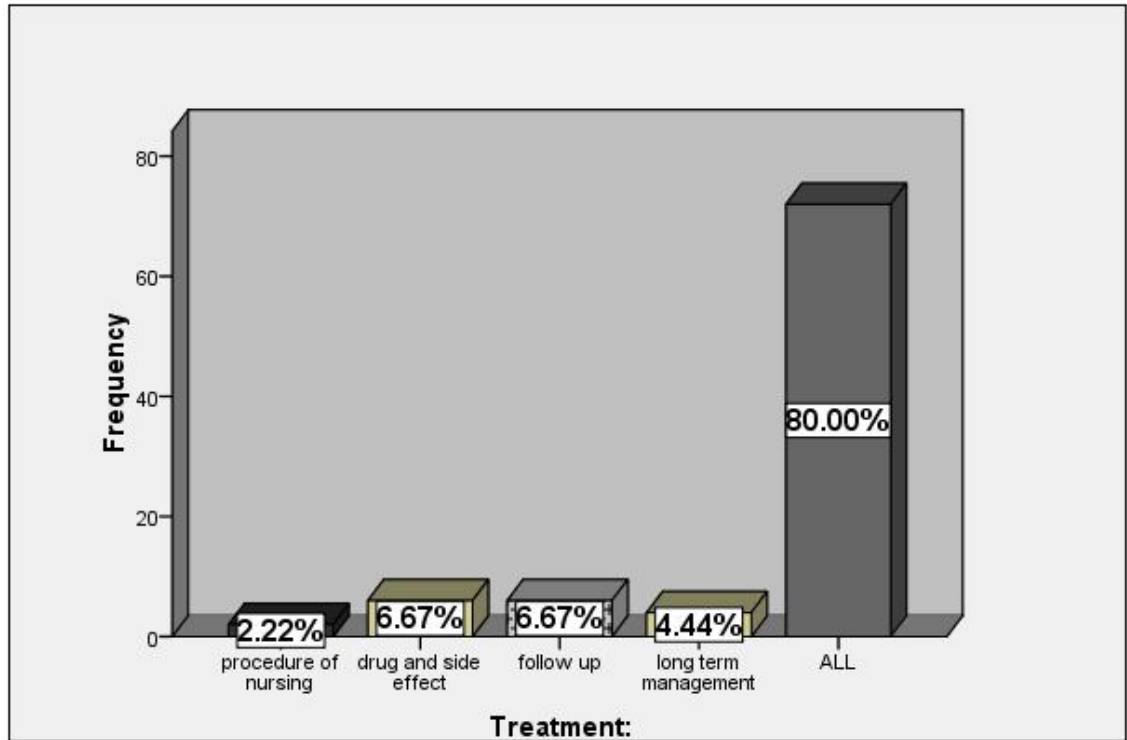


Figure (17): distribution of participants' knowledge regarding pt counseling should treatment.

Show majority of nurses had good knowledge represents (80%). poor knowledge represent (2.2%.6.7%,6.7%,4.4%).

Response to pain include:

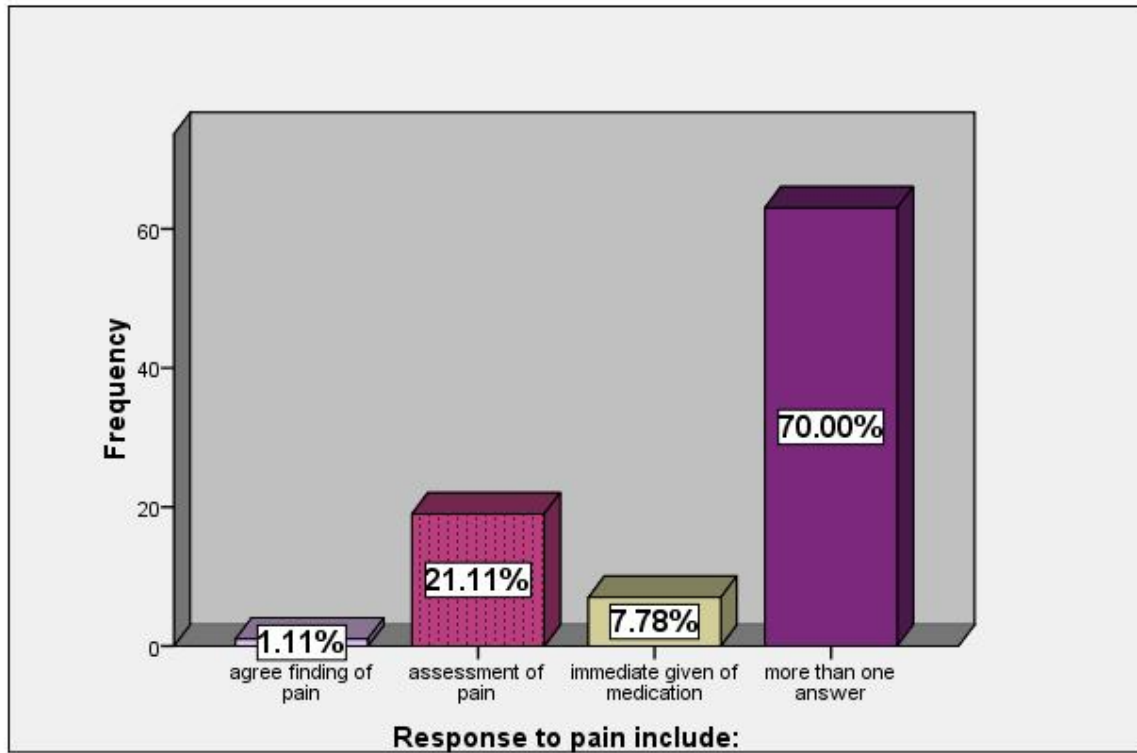


Figure (18): distribution of participants' attitude regarding response to pain. (n=90)

Show majority of nurses had satisfy attitude represents (70%).,poor knowledge represent(1.1%,21.1%,7.8%)

Alarm of monitor:

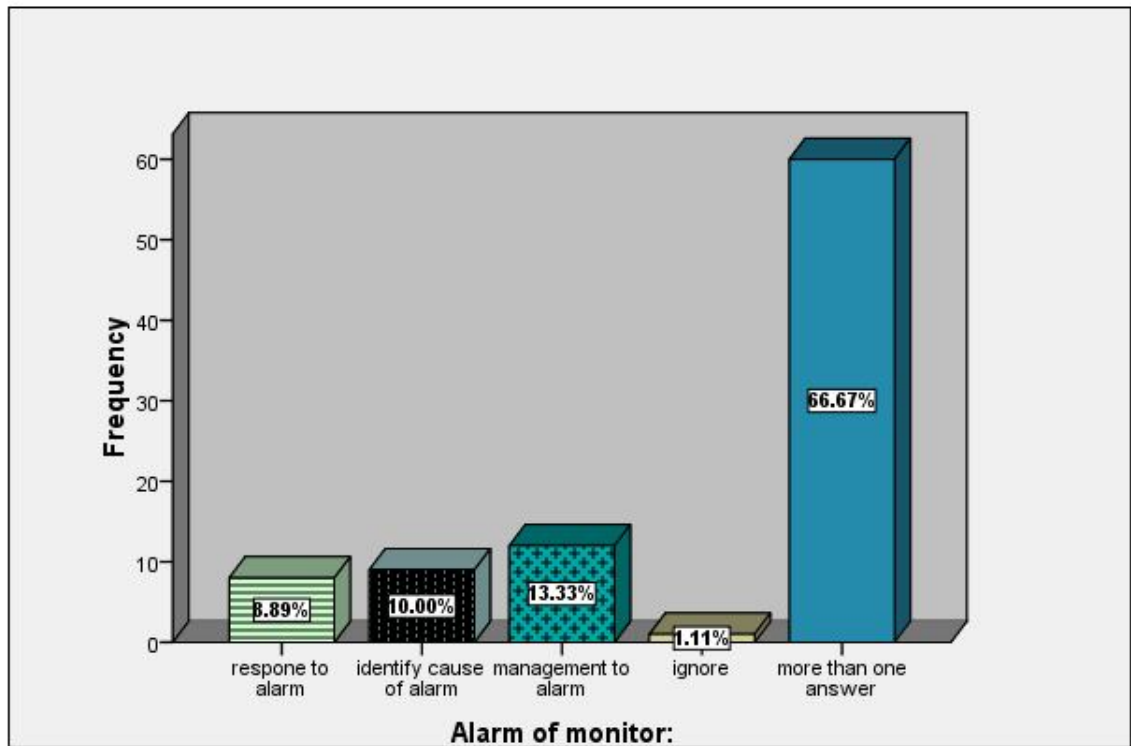


Figure (19): distributions of participant attitude regarding alarm of monitor. (n=90)

Show majority of nurses had satisfy attitude represents (66.7%). ,poor knowledge represent(8.9%,10%,13.3%,1.1%).

Anxiety of patient:

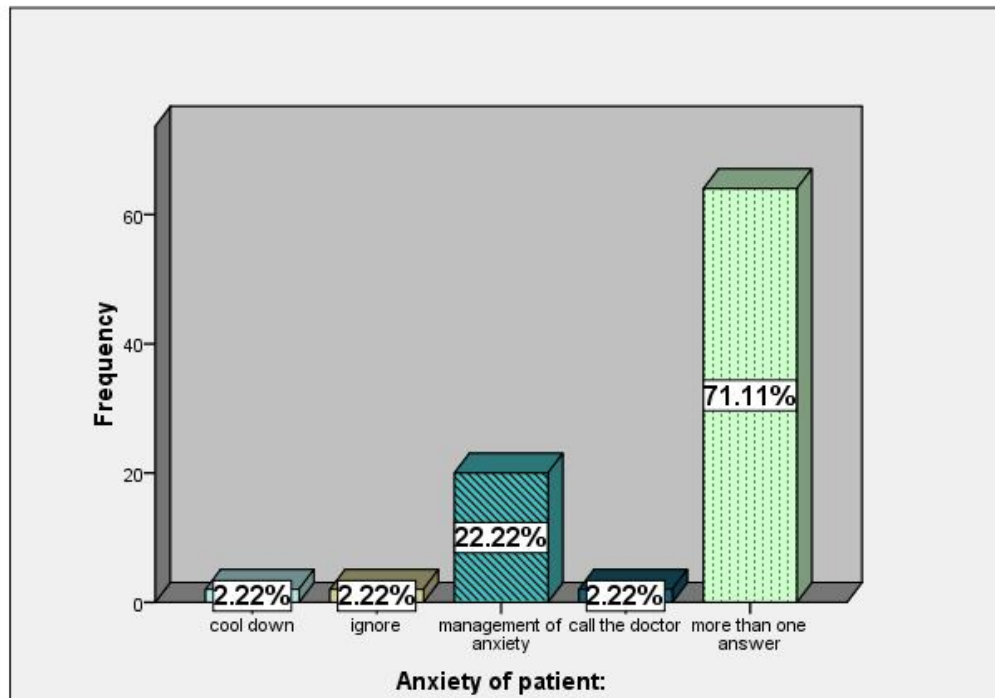


Figure (20): distribution of participant attitude regarding anxiety of pt. (n=90)

Show majority of nurses had satisfy attitude represents (71.1%). poor knowledge represent (2.2%,2.2%,22.2% , 2.2%,).

Chapter Five
Discussion

Chapter Five

Discussion, Conclusion & Recommendations

5.1 Discussion:

The study reveal this results the participants had good level of knowledge regard symptom of MI (82.2%) was significantly $p= (0.038)$.

Good knowledge regard risk factor of MI (86.7%) was insignificantly ($p=.065$) similar to study carried out by Taha A.M. .(2013) in Saudi Arabia witch reported that there was hypertension, diabetes mellitus, and, smoking were evident in 19.8% (P-value = 0.158), 53.% (P-value = 0.573) , 30.2% (P-value = 0.762) and 16.6% (P-value = 0.180) respectively with no significant statistical difference between STEMI and NSTEMI patients agreement with ALHabib et al.

Good knowledge regard diagnosis measures confirm MI (78.9%) was significantly $p= (.059)$.

Good knowledge regard absolute contraindication (75.6%) with height significantly $p= (0.000)$ disagree with Hassan at study $p= (0,085)$ insignificantly

Good knowledge regard disease and self-management (77.8%) was insignificantly $p=(0.729)$ and treatment good knowledge (80%) was insignificant $p=(.934)$.

Nurses had satisfy knowledge regard chest pain of MI characterized (63.3%) was high significantly $p= (0.000)$.pain radiated had satisfy knowledge (67.4%), ($p=0.821$) was insignificant. Satisfy knowledge regard typical indication for immediate thrombolytic for AMI (66.7%) was insignificantly $p= (0.983)$ agree with HassanatElbashir study $p= (0,183)$. Satisfy knowledge regard relative contraindication (68.2%) was insignificantly $p= (0.407)$ agree with Hassan at study $p= (0,183)$. Satisfy

knowledge regard side effect of thrombolytic (68.9%) was significant $p=(0.004)$ disagree with Hassant study $p=(0,780)$ significantly.

Poor level knowledge regard Golding hours of STK administration with insignificantly $p=(0.078)$ agree with Hassanat study... Poor knowledge regard based laboratory on heparin (65.6%) was insignificantly $p=(0.119)$.

Good practice regard pain management was insignificantly $p= (0.984)$ this result agreed with study conducted by HassanatElbashir which reported that there was insignificantly correlate (value $p=(0.214)$) but was high significantly compare with bench mark (p value .000).

Good practice regard immediate management when patient arrive to ER (81.1%) was insignificant $p= (0.215)$.good practice regard the drug can be given when pt arrive (82.2%) was insignificantly $p= (0,996)$.

Nurse attitude regard response to pain satisfy attitude (70%) was insignificantly ($p=.915$), Attitude regard alarm for monitor satisfy attitude (66.7%) was insignificantly $p=.541$, Attitude regard anxiety of pt satisfy attitude (71.1%) was insignificantly ($p=.540$)

Our finding showed that there was insignificant correlation between experiences and qualifications with knowledge, Practice and attitude ($p.value > 0.05$) (tables 2,3 and 4).

Experience insignificant ($p = (0.31, 0 .99, 0.30, 0.52, .95)$), qualification insignificant $p= (0.48, 0.05, 0.13,0 .06, 0.27)$ experience and qualification not affected in knowledge.

Experience insignificant($p=.47, 30, .41$) qualification insignificant ($p=.33, 0.10, .68$).experience and qualification not affect in practice.

Experience insignificant(p. value = 0.58, 0.92, 0.82). Qualification insignificant (p=0.28, 0.26, 0.10). Experience and qualification not affect in attitude.

5.2 Conclusion:

This study concludes that:

Medical staff had Good knowledge, Good practice and satisfy attitude.

5.3 Recommendation:

The study recommended the following:

- Continuous training program & work to increase nurses, competency in the management of AMI
- Written management protocol on AMI should be available in the unit.
- Accessible to technology.
- This more research should be conducted for evidence base practice (EBP).

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Appendix

ShendiUniversity

Faculty of Postgraduate and Scientific Research
Master of Critical Care of Nursing

Questionnaire

Nurse's performance regarding immediate management of patient with acute myocardial infarction in Khartoum State (2018)

Note: please put (√) in the right answer and (x) in wrong answer

Many questions require more than one correct answer to be chosen

No:

Part (1):

Demographic Data:

1. **Age:** 20 – 30 yrs 30 – 40yrs > 40 yrs
2. **Gender :** male female
3. **Years of experience:** < 1 yrs 4 – 6 yrs > 6 yrs
4. **Working area** CCU ER both
5. **Qualification:** Diploma BSc. MSc
PhD
6. **Training:** Never Once Twice three or
more

Part (2)

Knowledge and practice

7. Symptoms of MI include:

a- Chest pain b-Epigastric pain and (Nausea & vomiting)

c-Shortness of breath d-sweating one than one answer

8. The chest pain of MI characterized by:

a-crushed b-prolong
c-heaviness & tightness d-serve one than one answer

9. The pain is radiated to:

a-arm & shoulder b-neck
c-back d-posterior intra – capsular more than one answer

10. Risk factors of MI include:

a-smoking b-hyperlipidemia & obesity
c-DM & Hypertension d-family history all the above

11. Immediate management when patients arrive to ER:

a-put patient in cardiac bed b-give IV morphine
c-administration of oxygen therapy d-connect monitor and

ECG

more than one answer

12. Pain management includes:

a-put patient on comfortable position b-give IV morphine
c-supplemental oxygen d-nitro glycerides (GTN)
more than one answer

13. The drug can be given when patient arrive

a-aspirin & clopidogrel b-nitrate

c-morphine & antiemetic
heparin)

d-thrombolytic (streptokinase &

all the above

14. The diagnostic measures confirm MI includes:

a-12 lead ECG

b-cardiac enzymes

c-angiography

d- echocardiography

more than one answer

15. Typical indication for immediate thrombolytic therapy for acute MI:

a-presentation within 12 hours of onset of chest pain

b-ST segment elevation > 0.2 chest leads of > 0.1 in limb leads

c-dominant R waves and ST depression in V1 in ECG (posterior

MI)

d-new onset LBBB (left bundle branch block)

more than one answer

16. Relative contraindication includes:

a-current use of anticoagulant

b-pregnancy

c-severe uncontrolled hypertension

a-advanced liver

disease

more than one answer

17. Golden hours of streptokinase administration include:

a-first 6 hours

b-first 3 hours

c-12 hours

d-24 hours

more than one answer

18. Absolute contraindication of thrombolytic therapy includes:

a-acute bleeding

b-known bleeding disorder

c-stroke < 6 months

d- recent hemorrhagic stroke

more than one answer

19. Indication of administration of heparin include:

a-stroke

b-DVT

c-pulmonary embolism d-pt undergoing to PCI (percutaneous coronary intervention)

more than one answer

20. Based laboratory examination on administration heparin include:

a-pt (prothrombin time) b- INR (international normalized ratio)

c- APTT (activated partial thromboplastin time) d-serum troponin

more than one answer

21. Side effect of thrombolytic include:

a-hypertension b-thrombocytopenia

c-bleeding d-skin rash

more than one answer

22. Patient counseling should include:

the disease and self-management:

a-signs and symptoms b-sign of complications

c-Physical activities d- life style

more than one answer

23. Treatment:

a-procedure of nursing b-drug and side effect

c-follow up d-long term management

more than one answer

24. Response to pain include:

a-agree finding of pain b- assess of pain

c- immediate given of medication d-ignore

more than one answer

25. Alarm of monitor:

a-response to alarm b-identify cause of alarm

c-management to alarm d- ore

more than one answer

26. Anxiety of patient:

a –cool down

b- ignore

c-management of anxiety

d- call the doctor

more than one answer