بسم اللة الرحمن الرحيم

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Assessment of Nurse's knowledge regarding initial care of patient with acute coronary syndrome-in Omdurman military Hospital – Sudan 2018.

A Thesis Submitted in Partial Fulfillment of the Requirements for the Master Degree in Medical Surgical Nursing Science.

Submitted by:

Fatima Mubarak Edries Farah

BSc. International University of Africa

Supervised by:-

Dr: Sania Ahmed Mohamed Salih
BSc, MSc, Ph D, Medical &Surgical Nursing

بسم الله الرحمن الرحيم

قال تعالى:(قَالُواْ سُبْحَانَكَ لاَ عِلْمَ لَنَا إِلاَّ مَا عَلَّمْتَنَا إِنَّكَ أَنتَ الْعَلِيمُ الْحَكِيمُ).

صدق الله العظيم

سورة البقرة الآية (32).

Dedication

all praise to Allah, today we fold the days' tiredness and the errand summing up between the cover of this humble work . To the utmost knowledge lighthouse, to our greatest and most honored prophet Mohamed - May peace and grace from Allah be upon him., To the Spring that never stops giving my husband, to my mother who weaves my happiness with strings from her merciful heart... to my mother. To whom he strives to bless comfort and welfare and never stints what he owns to push me in the success way who taught me to promote life stairs wisely and patiently, to my dearest father To whose love flows in my veins, and my heart always remembers them, to my daughters, brothers and sisters.

Acknowledgement

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Abbreviation	Term
ACEI	Angiotensin-converting enzyme Inhibitor
ACS	Acute coronary syndrome
ADL	activities of daily living
AHA	American heart association
AV	Atrioventricular
CAD	disease
CABG	Coronary artery bypass graft
CBC	Complete blood count
CCR	Critical care unit
CCS	Canadian Cardiovascular Society
CHR	Coronary heart disease
CK	Creatinine kinase
CT	Computed tomography
CVP	Central venous pressure
CVD	Cardio vascular disease
DVT	Deep venous thrombosis
ECG	Electrocardiogram
FiO2	fraction of inspired oxygen
GP	Glycoprotein
IV	Intravenous.
MI	Myocardial infarction
MRA	Magnetic resonance angiography
MRI	Magnetic resonance imaging
NGT	Nitro glycerinate
NSAID	Non steroid anti-inflammatory drug.
NSTEMI	Non St elevation myocardial infarction.
PTCA	Percutaneous Transluminal Coronary Angioplasty
RCA	Right coronary artery
STMI	St elevation myocardial infarction.

Abstract

Background: ACS is a critical health status which requires standardized care policies, as well as it needs qualified and skilled health provider to obtain good outcome of management.

Objectives: To assess nurses knowledge regarding initial care of patient with acue coranary syndrome.

Methods: This is a descriptive hospital based study, conducted in Omdurman military hospital from May to november, questionnaire used to interview the study population .The study population were 34 staff nurses as total coverage, and data were analyzed by using the statistical package for social science program.

Results:the study showed the majority of nurses had bachelor education levelHad ,more than half were males(55.9%)also most of nurses had A good knowledge about definition of acute coronary syndrome, They showed high knowledge about risk factors of ACS, most of study nurses had good knowledge about complication and management of ACS disease.

Conclusion: The researcher identified that there is adequate knowledge about initial care of patient with ACS.

Recommendation: Continuing professional educational programs Continuous supervision of management, Maintain and provide all supplies need in emergency and critical care unit lead to prevent complication of ACS.

ملخص الدراسة:

خلفية : ان متلازمة الشريان التاجي تعتبر حالة مرضية حرجة تتطمب عناية طبية فائقة كما تحتاج لمقدم خدمة صحية مؤهل للحصول على نتائج إيجابية والوقاية من المضاعفات.

الأهداف : تهدف الدراسة إلى تقييم معرفة طاقم التمريض فيما يخص الرعاية التمريضية المقدمة لمرضى متلازمة الشريان التاجي بداية من دخول قسم الحوادث.

المنهجية: هذه دراسة وصفية مقطعيه حيث تم استخدام الاستبيان لقياس المعرفة،وقد أجريت في مستشفى أم درمان العسكري من مايو الى نوفمبر ، حيث تم إجراء مقابلات مع عينة الدراسة وكانت العينه 34 ممرض وممرضة ، ولقد تم تحليل البيانات باستخدام برنامج SPSS.

النتائج: هذه الدراسة قد اظهرت ان الغالبية العظمي من مجموعة الدراسة هم من حملة البكالريوس،واوضحت الدراسة ان معظم الممرضين لديهم معرفة جيدة عن متلازمة الشريان التاجي وكيفية العلاج.

الخلاصة: اظهرت الدراسة ان هناك معرفة جيدة عن متلازمة الشريان التاجي

التوصيات: اوصت الدراسة باستمرار البرامج التعليمية المهنية تحت إشراف الإدارة وصيانة وتوفير جميع المستلزمات في الطواري والعناية الحثيثة.

Chapter one

1.1Introduction

Cardiovascular diseases (CVDs) are the leading cause of disability and death in the United States. Diseases of the heart and peripheral vessels can affect quality of life and alter the ability of the individual to perform tasks of everyday living. Many factors leading to cardiovascular diseases can be controlled or modified. Education is important in preventing and treating occlusive CVDs. An estimated 83.6 million American adults have one or more types of CVDs. In 2012, an estimated 785,000 Americans will have had a new myocardial infarction (MI) and 470,000 a recurrent MI. About every 25 seconds, a person in the United States will have a coronary event, and every minute someone will die from one. More than one in three women have some form of CVD, which occurs on average about 6 years later than in men, often after menopause. In 2010, incidence of coronary heart disease (CHD) was greatest in people over age 65. The prevalence among men was 7.8% and in women, 4.6%. The average age for a person having a first heart attack is 64.5 for men and 70.3 for women. Smoking lowers this age for both genders but more so for women. Because women typically have heart attacks at older ages than men, they are more likely to die from heart attacks within a few weeks.[1] ACS comprise a set of life threatening   health conditions affecting the heart. In ACS, the blood supply to the heart in suddenly blocked due to cholesterol build up and the formation of a blood clot in the heart's arter ies. the resulting under supply of oxygen to the heart can lead to a spectrum of heart condition from chest pain (un stable angina)to a heart attack(myocardial infarction),during which the heart is damaged .An un stable angina episode result in a heart attack within three months in about 30 %of patient.[2]

1.2 Justification:

ACS is now single biggest killer in the western world. it is also afflicts and incapacitates many people in their most productive time of life . The nurse is the first one of health team face patient in ER therefore nurse would have knowledge and skills to provide nursing care of patient with ACS in acute phase to decrease morbidity and mortality. Critical illness requires life–saving intervention and application of high medical technology and intensive nursing within a specialist critical care unit. An ACS is an emergency situation requiring immediate diagnosis and treatment.

1.3-Objectives:-

1.3.1-General Objective:

To evaluate Nurses Knowledge regarding initial care of patient with acute coronary syndrome.

1.3.2: Specific Objective:

To assess:

1. Nurses' knowledge about ACS (disease, risk factors, causes, clinical manifestation ,treatment, and complications,).
2. Nurses role regarding initial care of patient with acute coronary syndrome.
3. Nurses knowledge about assessment of pain of ACS.
4. Nursing management of chest pain.
5. Nursing consideration regarding thrombolytic therapy and contraindication.

Chapter two

2. Literature review

2.1. Background:

CVDs are the number 1 cause of death globally: more people die annually from CVDs than from any other cause. An estimated 17.9 million people died from CVDs in 2016, representing 31% of all global deaths. Of these deaths, 85% are due to heart attack and stroke. Over three quarters of CVD deaths take place in low- and middle-income countries. Out of the 17 million premature deaths (under the age of 70) due to noncommunicable diseases in 2015, 82% are in low- and middle-income countries, and 37% are caused by CVDs. Most cardiovascular diseases can be prevented by addressing behavioral risk factors such as tobacco use, unhealthy diet and obesity, physical inactivity and harmful use of alcohol using population-wide strategies. People with cardiovascular disease or who are at high cardiovascular risk (due to the presence of one or more risk factors such as hypertension, diabetes, hyperlipidaemia or already established disease) need early detection and management using counseling and medicines, as appropriate. [6]

2.2.ACUTE CORONARY SYNDROME:

The term acute coronary syndrome (ACS) is used to encompass the continuum of CAD such as unstable angina pectoris and MI. Acute coronary syndrome is caused by a sequence of inflammatory processes mediated by activated macrophages, plaque rupture, tissue factor expressions and platelet activation leading to thrombus formation and coronary vessel occlusion.

Unstable Angina:

Unstable angina occurs in patients with worsening CAD and is noted by its changing or unpredictable pattern. Rest does not decrease the chest pain of unstable angina. This pain may even occur when the patient is at rest. The episodes of chest pain with unstable angina increase in frequency and severity, placing the patient at risk for myocardial damage or sudden death. Symptoms of angina usually occur when an artery is narrowed by at least 60% to 70%.

Myocardial Infarction:

An MI (heart attack), results in the death of heart muscle. The affected myocardial cells in the heart are permanently destroyed. An MI occurs from a partial or complete blockage of a coronary artery, which decreases the blood supply to the cells of the heart supplied by the blocked coronary artery. The extent of the cardiac damage varies depending on the location and amount of blockage in the coronary artery. This is a potentially devastating condition. The ability of the heart to contract, relax, and propel blood throughout the body requires healthy cardiac muscle. Results depends on the speed and effectiveness of treatment. MI is identified by type. Non–ST-segment elevation MI (NSTEMI) is also known as a non–Q-wave MI. An ST-segment elevation MI (STEMI) is also known as a Q-wave MI and is the deadliest type because it is usually caused by a complete blockage of the artery. With timely reperfusion, cell death may not occur, which reduces the amount of permanent damage. Those experiencing an MI are typically men over age 40 with atherosclerosis. Although MIs can occur at any age in men or women, women who smoke and use oral contraceptives have a higher risk.

Silent Ischemia:

Silent ischemia occurs without pain and can carry great risk. The older adult and those with hypertension or diabetes most often have silent ischemia.

Sudden Cardiac Death:

Sudden cardiac death is cardiac arrest triggered by lethal ventricular dysrhythmias or a systole from an abrupt occlusion of a coronary artery. Prompt treatment is required in an attempt to prevent death.[1]

Other Classification:

Acute coronary syndromes include:

- Unstable angina.
- Non–ST-segment elevation myocardial infarction (NSTEMI).
- ST-segment elevation myocardial infarction (STEMI).

These syndromes all involve acute coronary ischemia and are distinguished based on symptoms, ECG findings, and cardiac marker levels. It is helpful to distinguish the syndromes because prognosis and treatment vary.

Unstable angina:

(Acute coronary insufficiency, preinfarction angina, intermediate syndrome) is defined as one or more of the following in patients whose cardiac biomarkers do not meet criteria for MI:

- Rest angina that is prolonged (usually > 20 min)

- New-onset angina of at least class 3 severity in the Canadian Cardiovascular Society (CCS) classification.

- Increasing angina, previously diagnosed angina that has become distinctly more frequent, more severe, longer in duration, or lower in threshold (eg, increased by ≥ 1 CCS class or to at least CCS class 3)ECG changes such as ST-segment depression, ST-segment elevation, or T-wave inversion may occur during unstable angina but they are transient. Of cardiac markers, CK is not elevated but cardiac troponin, particularly when measured using high-sensitivity troponin tests .may be slightly increased. Unstable angina is clinically unstable and often a prelude to MI or arrhythmias or, less commonly, to sudden death.

- **Non–ST-segment elevation MI:** (NSTEMI, subendocardial MI) is myocardial necrosis (evidenced by cardiac markers in blood; troponin I or troponin T and CK will be elevated) without acute ST-segment elevation. ECG changes such as ST-segment depression, T-wave inversion, or both may be present.

- **ST-segment elevation MI**: (STEMI, transmural MI) is myocardial necrosis with ECG changes showing ST-segment elevation that is not quickly reversed by nitroglycerin or showing new left bundle branch block. Cardiac markers, troponin I or troponin T, and CK are elevated. Both types of MI may or may not produce Q waves on the ECG (Q wave MI, non-Q wave MI).[7]

2.3. Pathophysiology:

MI does not happen immediately. Ischemic injury evolves over several hours before complete necrosis and infarction take place. The ischemic process affects the subendocardial layer, which is most sensitive to hypoxia. This process leads to depressed myocardial contractility. The body's attempt to compensate for decreased cardiac function triggers the sympathetic nervous system to increase the heart rate. The change in heart rate increases myocardial oxygen demand, further depressing the myocardium. Prolonged ischemia can produce severe cellular damage and necrosis of cardiac muscle. Once necrosis takes place, the contractile function of the muscle is permanently lost. The heart has a zone of ischemia and injury around the necrotic area. The zone of injury is next to the necrotic area and is susceptible to becoming necrosed. If treatment is initiated within the first hour of symptoms of the MI, the area of damage can be minimized. Around the injury zone is an area of ischemia and viable tissue. If the heart responds to treatment, this area can rebuild and maintain collateral circulation. If prolonged ischemia takes place, the size of the infarction can be quite large. The size of the infarction depends on how quickly the blood supply from the blocked artery can be restored. The area affected by an MI depends on the coronary artery involved and the extent of occlusive coronary disease. Being familiar with the anatomy of the heart and the area of the MI helps the nurse anticipate dysrhythmias, conduction disturbances, and HF, which are the major complications of MIs. The left coronary artery feeds the anterior wall of the heart, which also includes most of the left ventricle. An occlusion in this area causes an anterior wall MI. When the left ventricle is affected, there can be severe loss of left ventricular function, leading to severe changes in the hemodynamic status of the patient. The right coronary artery (RCA) feeds the inferior wall and parts of the atrioventricular node and the sinoatrial node. An occlusion of the RCA leads to an inferior MI and abnormalities in impulse formation and conduction. Serious dysrhythmias can occur early in an inferior MI that may be life threatening. The left circumflex coronary artery feeds

the lateral wall of the heart and part of the posterior wall of the heart. A lesion in the circumflex leads to a lateral wall infarction of the left ventricle.[1]

2.4. Etiology:

The most common cause of acute coronary syndromes is:

- An acute thrombus in an atherosclerotic coronary artery.
- Atheromatous plaque sometimes becomes unstable or inflamed, causing it to rupture or split, exposing thrombogenic material, which activates platelets and the coagulation cascade and produces an acute thrombus. Platelet activation involves a conformational change in membrane glycoprotein (GP) IIb/IIIa receptors, allowing cross-linking (and thus aggregation) of platelets. Even atheromas causing minimal obstruction can rupture and result in thrombosis; in > 50% of cases, pre-event stenosis is <40%. Thus, although the severity of stenosis helps predict symptoms, it does not always predict acute thrombotic events.
- The resultant thrombus abruptly interferes with blood flow to parts of the myocardium. Spontaneous thrombolysis occurs in about two thirds of patients; 24 h later, thrombotic obstruction is found in only about 30%. However, in virtually all cases, obstruction lasts long enough to cause tissue necrosis.

  Rarer causes of acute coronary syndromes are:
- Coronary artery embolism
- Coronary spasm

  Coronary arterial embolism can occur in mitral or aortic stenosis, infective endocarditis, or marantic endocarditis. Cocaine use and other causes of coronary spasm can sometimes result in MI. Spasm-induced MI may occur in normal or atherosclerotic coronary arteries. [7]

2.5. Risk factor:

Acute coronary syndromes, just like heart failure and stroke (link opens in new window), are much more likely in people who have certain risk factors. These include:

- Smoking
- High blood pressure

- High blood cholesterol

- Diabetes

- Physical inactivity

- Being overweight or obese

- A family history of chest pain, heart disease or stroke

Your primary care doctor can help you understand your personal risk and what you can do about it. "[The physician] should also be the one to say, 'By the way, if you ever have any of these symptoms, I want you to call 9-1-1,'" Bolger said. "If someone has told you that in advance, you're much more likely to do it. [8]

2.6. Signs and Symptoms:

Chest pain is a classic symptom of an MI. The pain begins suddenly and continues without relief with rest or administration of NTG. The pain in the center of the chest is usually described as crushing, viselike, or as if an elephant is standing on the chest. The pain may radiate to the back, one or both arms and shoulders, neck, or jaw. The pain can imitate indigestion or a gallbladder attack with abdominal pain and vomiting. Other classic MI symptoms include shortness of breath, dizziness, nausea, and sweating. When listening to lung sounds, crackles or wheezing may be heard. The pulse may be rapid or irregular, and an extra heart sound (referred to as S3 or S4) may be present. The presence of an extra heart sound can mean ventricular failure is imminent.

2.6.1 TIMELY SYMPTOM TREATMENT:

Individuals often deny or fail to recognize that an MI is occurring because they experience atypical MI symptoms or their symptoms are similar to other mild conditions such as indigestion ("Gerontological Issues"). Patients have reported that the symptoms of an MI that they experienced were not what they expected. If people expect to have the dramatic heart attack symptoms seen on television (which are usually not the same as those in real life) and they do not, they are likely to wait to seek treatment. Waiting 2 to 24 hours before seeking medical care is common, yet the first hour after symptom onset is crucial for administering the newer reperfusion treatments that restore blood flow, minimize tissue damage, and

save lives. Individuals should not drive themselves or let someone else drive them to the hospital if they are having chest pain. Call emergency medical care (911 or local emergency services number) so lifesaving treatment can begin. Because so few people arrive at the emergency room quickly enough to benefit from reperfusion treatment, several agencies have educational programs to address this issue. Individuals need to be educated that "time is muscle." As time passes during an MI, more muscle is lost. The National Heart, Lung, and Blood Institute and the AHA promote a campaign called "Act in Time to Heart Attack Signs." The purpose of the campaign is to educate people on the importance of recognizing heart attack symptoms.

2.6.2. Women and Heart Health:

Heart disease remains the leading cause of death in women in the United States. American women are six times more likely to die of heart disease than breast cancer. Heart disease kills more women than all cancers combined in the over-age-65 groups. Ethnicity is also a factor among women. African American women are more likely than Caucasian women to develop heart disease. Women tend to have an acute MI at an older age than men. Women also have a higher mortality rate and are more likely to have complications such as ventricular fibrillation and HF than men. Women may have classic chest pain, but they are also likely to have other symptoms as well that men do not typically have. Research is focusing on understanding women and cardiac disease. Atypical symptoms reported by women may include extreme fatigue, epigastric pain, jaw pain, indigestion, nausea and vomiting, dyspnea, shortness of breath, or cramping in the chest. A high percentage of women (more than 50%) noted prodromal symptoms a month before an acute MI. These symptoms included unusual fatigue, sleep disturbances, and shortness of breath. Fewer than 30% reported chest discomfort. Delay in seeking care has also been identified in women. Women also often do not associate their symptoms with a heart attack because they believe it is a male condition. Women with atypical symptoms usually delay treatment, and when treated have less aggressive management, which leads to increased mortality.[1]

MYOCARDIAL INFARCTION SUMMARY

Signs and symptoms	Classic
	Crushing, viselike chest pain with radiation to arm, shoulder, neck, jaw, or back Shortness of breath-Dizziness-Nausea Sweating
	Atypical
	Absence of chest pain-Fatigue-Cramping in chest-Anxiety-Feeling of impending doom-Falling
	More Common in Women
	Epigastric or abdominal pain Chest discomfort, pressure, burning Arm, shoulder, neck, jaw, or back-Pain-Discomfort/pain between shoulder Blades-Shortness of breath-Fatigue- Indigestion or gas pain-Nausea or vomiting.
Diagnostic Tests	-ECG-Serum cardiac troponin I or T Serum myoglobin-Serum CK-MB-CBC-Serum magnesium and potassium-Vital
Therapeutic Measures	signs, oxygen saturation, intake and output.
	Medications-Oxygen-Morphine sulfate
	Nitrates-Fab Four cardiac
	medications:
	aspirin, statin, ACEI, beta blocker- Platelet aggregation inhibitors-Thrombolytics Anticoagulants-Antidysrhythmics Vasodilators-Percutaneous coronary intervention

	Myocardial revascularization−CABG-Fluid restriction Daily weights-Bed rest with bedside commode/bathroom privileges- Low sodium diet advanced to diet as tolerated; no caffeine-Cardiac rehabilitation.
Complications	-Dysrhythmias-Heart failure-Cardiogenic shock-Valvular insufficiency.
Priority Nursing Diagnoses	-Acute Pain-Anxiety-Decreased Cardiac Output-Deficient Knowledge.[1]

2.7. Complications of Acute Myocardial Infarction
Vascular Complications

• Recurrent ischemia

• Recurrent infarction

Myocardial Complications

• Diastolic dysfunction

• Systolic dysfunction

• Heart failure

• Cardiogenic shock/hypotension

• Right ventricular infarction

• Ventricular cavity dilation

• Aneurysm formation (true, false)

Mechanical Complications

• Left ventricular free wall rupture

• Ventricular septal rupture

• Papillary muscle ruptures with acute mitral regurgitation

Pericardial Complications

• Pericarditis

• Dressler's syndrome

• Pericardial effusion

Thromboembolic Complications

• Mural thrombosis

• Systemic thromboembolism

• Deep venous thrombosis (DVT)

• Pulmonary embolism

Electrical Complications

• Ventricular tachycardia

• Ventricular fibrillation

• Supravetricular tachydysrhythmias

• Bradydysrhythmias

• Atrioventricular (AV) block (first, second, or third degree). [4]

2.8. Assessment:
2.8.1. History and Physical Examination:

The most common presenting complaint of a patient with myocardial infarction is chest discomfort or pain. Unlike the pain of angina, the pain of myocardial infarction is often more prolonged and unrelieved by rest or sublingual nitroglycerin. Additional symptoms include diaphoresis, dyspnea, weakness, fatigue, anxiety, restlessness, confusion, shortness of breath, or a sense of impending death. Some patients (especially those with inferior wall infarction) experience nausea and vomiting (believed to be related to the severity of the pain and vagal stimulation). On physical examination, the patient may be restless, agitated, and in distress. The skin is cool and moist. Vital signs may show a low-grade fever, hypertension, and tachycardia from increased sympathetic tone or hypotension and bradycardia from increased vagal tone. The pulse may be irregular and faint. Auscultation of the heart may reveal a diminished S1 due to decreased contractility, an S4 (due to decreased left ventricular compliance), or an S3 (due to ventricular dysfunction and heart failure). Transient systolic murmurs may be heard because of papillary muscle dysfunction. After about 48 to 72 hours, many patients develop a pericardial friction rub. Additional findings on physical

examination, such as jugular venous distention; labored, rapid breathing; or fi ne crackles, coarse crackles, or rhonchi on auscultation of the lungs may indicate the development of complications such as heart failure or pulmonary edema. Patients with right ventricular infarcts may present with jugular venous distention as well as peripheral edema and elevated central venous pressure (CVP).

2.8.2. Electrocardiography

Myocardial infarction is characterized by changes in the T wave, the ST segment, and the Q wave that evolve over time. Within a few days after the infarction, the elevated ST segments return to baseline. Persistent elevation of the ST segment may indicate the presence of a ventricular aneurysm. The T waves may remain inverted for several weeks, indicating areas of ischemia near the infarct region. Eventually, the T waves should return to their upright confi guration. The Q waves do not disappear and therefore always provide electrocardiographic evidence of a previous infarction. Abnormal Q waves accompanied by ST-segment elevations indicate an acute infarction, whereas abnormal Q waves accompanied by a normal ST segment indicate a previous infarction. A routine 12-lead ECG does not provide an adequate view of the right ventricle or of the posterior wall of the left ventricle; therefore, additional leads are needed to view these areas. To attain an accurate view of the right ventricle, right-sided chest leads are recorded by placing the six chest electrodes on the right side of the chest using landmarks analogous to those used on the left side. These six right sided views are examined for patterns of ischemia, injury, and infarction in the same way left-sided chest leads are evaluated. To detect posterior wall abnormalities, the leads anatomically opposite the posterior wall (i.e., V1 and V2) are examined and the principle of reciprocal change is used. If tall R waves with ST-segment depressions are noted in V1 and V2, the pattern is consistent with a posterior wall infarction.

2.8.3. Laboratory Tests

When myocardial cells are damaged by an infraction, biochemical markers are released into the bloodstream and can be detected by laboratory tests

• Within 1 to 4 hours of infarction, myoglobin appears in the serum; the peak occurs at 6 to 7 hours.

• Within 4 to 6 hours, the MB isoform of creatinine kinase (CK-MB) begins to appear in serum, and it peaks after approximately 18 to 24 hours. However, the appearance and peak of CK-MB may occur significantly earlier in patients who have a non–Q-wave infarction or who have undergone successful reperfusion therapy (eg, angioplasty or thrombolysis). Because elevated CK-MB values return to baseline 36 to 40 hours after infarction in patients who do not have ongoing necrosis; resampling can be used to detect reinfarction.

• Within 4 to 6 hours, an increase in troponin levels is detected, with levels generally peaking 24 hours after the onset of symptoms. As with CK-MB, serial testing is required and reperfusion strategies change the timing of the peak troponin value. Troponins remain elevated for up to 10 days after the cardiac event, facilitating diagnosis of patients who delay seeking treatment.

2.8.4. Diagnostic Studies

A chest radiograph and echocardiogram, obtained as soon as possible, are useful in ruling out an aortic dissection and acute pericarditis and detecting structural abnormalities (eg, valve defects). Other diagnostic studies that may be ordered during the course of the patient's hospitalization or shortly after discharge may include

• Radionuclide studies, to provide information about the presence of CAD as well as the location and quantity of ischemic and infracted myocardium

• Magnetic resonance imaging (MRI), to reveal structural and functional abnormalities of the heart and aorta

• Coronary magnetic resonance angiography (MRA), which uses the principles of MRI in combination with a contrast medium to create images of vessel walls and plaques.

• Computed tomography (CT) and CT angiography, to obtain information about the circulation of blood in the heart and coronary arteries.

• Coronary angiography, to help the physician determine whether PTCA or stent placement is indicated, or if the patient is a candidate for CABG.

• Stress testing, to assess the patient's functional capacity and ability to perform activities of daily living (ADLs), to evaluate the efficacy of the patient's medical therapy, and to risk-stratify the patient based on the likelihood of a subsequent cardiac event.[4]

2.8.5. Assessment:

Cardiovascular

Chest pain or discomfort, palpitations. Heart sounds may include S3, S4, and new onset of a murmur. Increased jugular venous distention may be seen if the MI has caused heart failure. Blood pressure may be elevated because of sympathetic stimulation or decreased because of decreased contractility, impending cardiogenic shock, or medications. Pulse deficit may indicate a trial fibrillation. In addition to ST-segment and T-wave changes, ECG may show tachycardia, bradycardia, and dysrhythmias.

Respiratory

Shortness of breath, dyspnea, tachypnea, and crackles if MI has caused pulmonary congestion. Pulmonary edema may be present.

Gastrointestinal: Nausea and vomiting.

Genitourinary; Decreased urinary output may indicate cardiogenic shock.

Skin: Cool, clammy, diaphoretic, and pale appearance due to sympathetic stimulation from loss of contractility may indicate cardiogenic shock. Dependent edema may also be present due to poor contractility.

Neurologic: Anxiety, restlessness, light-headedness may indicate increased sympathetic stimulation or a decrease in contractility and cerebral oxygenation. The same symptoms may also herald cardiogenic shock. Headache, visual disturbances, altered speech, altered motor function, and further changes in level of consciousness may indicate cerebral bleeding if patient is receiving thrombolytics.

Psychological: Fear with feeling of impending doom, or patient may deny that anything is wrong.[5]

2.9. Management:

2.9.1. Early Management

- Early management entails confirming the diagnosis of myocardial infarction and initiating reperfusion therapy.

- Diagnosis and initial management must be rapid because the benefit of reperfusion therapy is greatest if therapy is initiated quickly. The initial diagnosis of myocardial infarction is based primarily on the patient's symptoms, the 12 lead ECG, and the serial cardiac enzymes. If the initial screening suggests infarction, the interventions are initiated.

- The nurse also checks the vital signs frequently, establishes IV access, and continuously assesses the patient's cardiac rhythm.

- Blood is drawn for serum cardiac markers, hematology, chemistry, and a lipid profile.

- During the initial evaluation, the patient and family may be anxious. To help alleviate anxiety, the nurse provides reassurance, support, and brief and clear explanations of interventions.

Fibrinolytic Therapy:

Fibrinolytic agents may be used in the treatment of patients with acute STEMI, and for those with ST-segment depression if a posterior myocardial infarction is suspected. Fibrinolytic therapy provides maximum benefit if given within4 hours of the onset of symptoms, and there is a time-dependent decrease in efficacy.4 these drugs are not effective or appropriate for patients without ST-segment elevation or with nonspecific ECG Changes. Unless contraindicated Fibrinolytic may be given to patients with STEMI who meet either of the following criteria:

• Onset of symptoms within the previous 12 hours and ST-segment elevation greater than 0.1 mV in two or more contiguous precordial leads or in two or more adjacent limb leads, or

• New-onset left bundle branch block the patient is closely monitored during and after the infusion of a Fibrinolytic agent. The nurse assesses the patient for signs of reperfusion, which include resolution of chest pain, normalization of elevated ST segments, and the development of reperfusion dysrhythmias (eg, accelerated idioventricular rhythm, ventricular tachycardia, atrioventricular (AV) block). In addition, the nurse assesses for complications from the drug therapy (eg, allergic reactions, bleeding, hypotension), and for reocclusion of the coronary artery. Indicators of reocclusion include new onset of chest pain, return of ST-segment elevation, and hemodynamic instability.

Percutaneous Transluminal Coronary Angioplasty:

PTCA may be used instead of Fibrinolytic therapy for patients with STEMI who present within 12 hours of the onset of symptoms, for patients with NSTEMI, and for patients with persistent ischemic symptoms. The nurse carefully monitors the patient after a PTCA for retroperitoneal or vascular hemorrhage, other evidence of bleeding, early acute reocclusion, and late restenosis. If PTCA is not successful, the patient may be evaluated for emergent CABG surgery.

Initial Management of the Patient with a Suspected Myocardial Infarction:

Action	Rationale
-Administer aspirin, 160–325 mg chewed.	-Platelets are one of the main components in thrombus formation when a coronary plaque is disrupted, and aspirin diminishes platelet aggregation.
-After recording the initial 12-lead ECG, place the patient on a cardiac monitor and obtain serial ECGs.	
- 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.	-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.
- 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). 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.

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

-Administer-β adrenergic blocker.

- Pulmonary edema often causes hypoxemia in patients with myocardial infarction.

-Sublingual nitroglycerin helps to promote vasodilation (but is relatively ineffective in relieving pain in the early stages of a myocardial infarction).

- Morphine is the drug of choice to relieve the pain of a myocardial infarction.

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

2.9.2. Ongoing Management

As the patient progresses out of the immediate crisis stage, the goal of management continues to be maximizing cardiac output while minimizing cardiac Workload. Monitoring includes frequent vital sign assessment, continuous cardiac monitoring with ST-segment monitoring, and serial 12- lead ECGs and serum cardiac marker testing. Prompt recognition and management of complications is Essential in reducing mortality and morbidity. For the first 12 hours of hospitalization, patients who are hemodynamically stable and free of ischemic chest discomfort remain on bed rest with bedside commode Privileges, and then their activity level is gradually increased. When the oxygen saturation level is stable for more than 6 hours, the need for continuous oxygen therapy is reassessed and the fraction of inspired oxygen (FiO2) may be weaned down. The patient is often not given anything by mouth until the pain has resolved. After the pain has resolved, the patient is given

clear liquids and progressed To a heart-healthy diet as tolerated. Daily weights are recorded, and intake and output are measured to detect fluid retention. Stool softeners are administered to prevent straining, which can cause sudden and significant changes in systolic blood pressure and heart rate (Valsalva maneuver), placing the patient at risk for ventricular dysrhythmias.

2.9.3. Pharmacotherapy:

Medications administered to patients with myocardial infarction may include the following:

• Daily aspirin is administered in definitely.

• IV unfractionated heparin or LMWH is used in

Patients after STEMI who are at high risk for systemic emboli. The risk is highest in patients with an anterior myocardial infarction, a trial fibrillation, cardiogenic shock, or a previous embolus.

• Angiotensin-converting enzyme (ACE) inhibitors are administered orally within the first 24 hours to patients with anterior wall myocardial infarction, pulmonary congestion, or a left ventricular ejection fraction less than 40%, in the absence of Hypotension. ACE inhibitors help prevent ventricular remodeling and preserve ejection fraction.

• An insulin infusion may be required to normalize the patient's blood glucose levels during the first several days following STEMI.

• Magnesium is indicated for patients with a documented magnesium def cit and for those with torsades de pointes ventricular tachycardia due to prolonged QT intervals.

• B-Adrenergic blockers are administered intravenously during the initial hours of the evolving infarction, followed by oral therapy provided there are no contraindications. Calcium channel blockers may be given to patients in whom β-adrenergic blocker therapy is ineffective or contraindicated.

• Nitrate therapy may be continued beyond the first 24 to 48 hours for patients with recurrent angina or persistent heart failure.

• Statins are given within the first 24 hours and may be continued for 6 months or in definitely.

• Antiplatelet (eg, Clopedigrel (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.

Hemodynamic Monitoring:

Pulmonary artery pressure monitoring is indicated in patients with myocardial infarction who have severe or progressive heart failure, pulmonary edema, Cardiogenic shock, progressive hypotension, or suspected mechanical complications. The PAOP is closely followed for assessment of left ventricular filling pressures. APAOP below 18 mm Hg may indicate volume depletion, whereas a PAOP greater than 18 mm Hg indicates pulmonary congestion or Cardiogenic shock. Continuous cardiac output monitoring is used to evaluate the cardiac output and cardiac index. In some situations, monitoring venous oxygen saturation may also be useful. Invasive arterial monitoring is indicated for patients with myocardial infarction who have severe hypotension or for those receiving vasopressor or vasodilator drugs.[4]

2.10. Administration of Thrombolytic Therapy:

2.10.1. Indications

• Chest pain for longer than 20 minutes, unrelieved by nitroglycerin

• ST-segment elevation in at least two leads that face the same area of the heart

• Less than 6 hours from onset of pain Absolute Contraindications

• Active bleeding

• Known bleeding disorder

• History of hemorrhagic stroke

• History of intracranial vessel malformation

• Recent major surgery or trauma

• Uncontrolled hypertension

• Pregnancy

2.10.2. Nursing Considerations

• Minimize the number of times the patient's skin is punctured

• Avoid intramuscular injections

• Draw blood for laboratory tests when starting the IV line

• Start IV lines before thrombolytic therapy; designate one line to use for blood draws

• Avoid continual use of noninvasive blood pressure cuff

• Monitor for acute dysrhythmias and hypotension

• Monitor for reperfusion: resolution of angina or acute ST segment changes

• Check for signs and symptoms of bleeding: decrease in hematocrit and hemoglobin values, decrease in blood pressure, increase in heart rate, oozing or bulging at invasive procedure sites, back pain, muscle weakness, changes in level of consciousness, complaints of headache

• Treat major bleeding by discontinuing thrombolytic therapy and any anticoagulants; apply direct pressure and notify the physician immediately

• Treat minor bleeding by applying direct pressure if accessible and appropriate; continue to monitor. [3]

Chapter Three

3. Material and Methodology

3.1: Study design:

This was descriptive cross sectional; Hospital based study, aimed to assess nurse's knowledge regarding initial care of patient with acute coronary syndrome at Omdurman military hospital in 2018.

3.2: Study area:

This study was conducted in Khartoum state in (Omdurman city).Khartoum state it's one of the eighteen state of the Sudan although it is the smallest state by area (22.142) km2.itis the most population (5,274,321) in 2008census).at Omdurman Military Hospital General Military Hospital represents most medical work and medical services department is a hospital base and reference for the armed forces. Geographical location of the military hospital is bordered by the North Palace of Youth and Children and Mawrada Street. From the South Command, Staff College and Karary University from the West, Is bounded from the east with White Nile. Functions of general military hospital: Are Provide medical services for patients and their families and military personnel to civilians in case of emergency. These services include: Ambulance services ,Medical follow-up services (clinics converted) ,Immunization, Processing decent place to display and medical examination of recruits of the armed forces. Provide the means diagnostic coefficient, radiation. Provide the means of different therapeutic (drugs, services, equipment). Provide a sufficient number of medical staff (doctors, technicians, nurses) for the article, the burden of service.

3.3Study setting:

This study conducted at Emergency department located at north direction of military hospital composed of 90 bed, triage, room (A- B- C) CCR, recitation, trauma and specially room.

3.4: Study population:

The targeted   populations of this study was all qualified   nurses working in triage, room (A-B) CCR   , in emergency department in Omdurman military Hospital.

3.5: Inclusion and exclusion criteria

Inclusion criteria:

All   qualified   nurses working in:

− Triage, room (A-B) CCR   , in emergency department.

− Available during study period.

− Willing to participate in the study.

Exclusion criteria:

Staff nurse who are:

− Diploma holder.

− Not willing to participate in the study.

− Not Available during study period.

3.6: Sampling and Sample size:

Sampling:

Total coverage of all qualified nurses working in triage- room (A.B) CCR in emergency department in Omdurman military Hospital. (Select randomize sampling).

Sample size: (34) nurse.

3.7 Tools of data collection:

A designed structured, self administered questionnaire was used to collect the data from study subject's .the Questionnaire consists of:-

-Demographic data.

-knowledge regarding ACS.

3.8 Scoring system:

Questionnaire:

Scoring system was established by researcher which the data was distributed Three categories to measure the level of nurses knowledge about ACS, if the nurse

respond to (4, 3) choice it consider good knowledge, (2) choice consider fair knowledge, (1, 0) choice consider poor knowledge.

3.9: Technique of data collection:

The collection of data from subjects under study was collected by filling questionnaire within one week, at their rest time.

3.10: Data analysis:

The collected data was analyzed using statistical package for social sciences (SPSSversion 21) and presented in forms of tables and figures.

3.11: Ethical considerations:

Letter from Shendi University- Faculty of Nursing Science was taken to Omdurman Military Hospital.

− Explanation of purpose of questionnaire to respondents before administration of data, and were told that it is voluntary.

− Verbal consent was taken.

Chapter Four

Result

Table (1): Represent the distribution of participant age

Age group (years)	Frequency	%
22-24	23	67.6
25-27	8	23.5
>27	3	8.8
Total	**34**	**100%**
Range	22-27 years	
Mean±SD	24.2±2.04 years	

Table (2): Represent the distribution of participant Gender

Gender	Frequency	%
Males	19	55.9
Female	15	44.1
Total	**34**	**100%**

Figure (1): Distribution of study population according to their Qualifications:

Fig. (1): Qualification
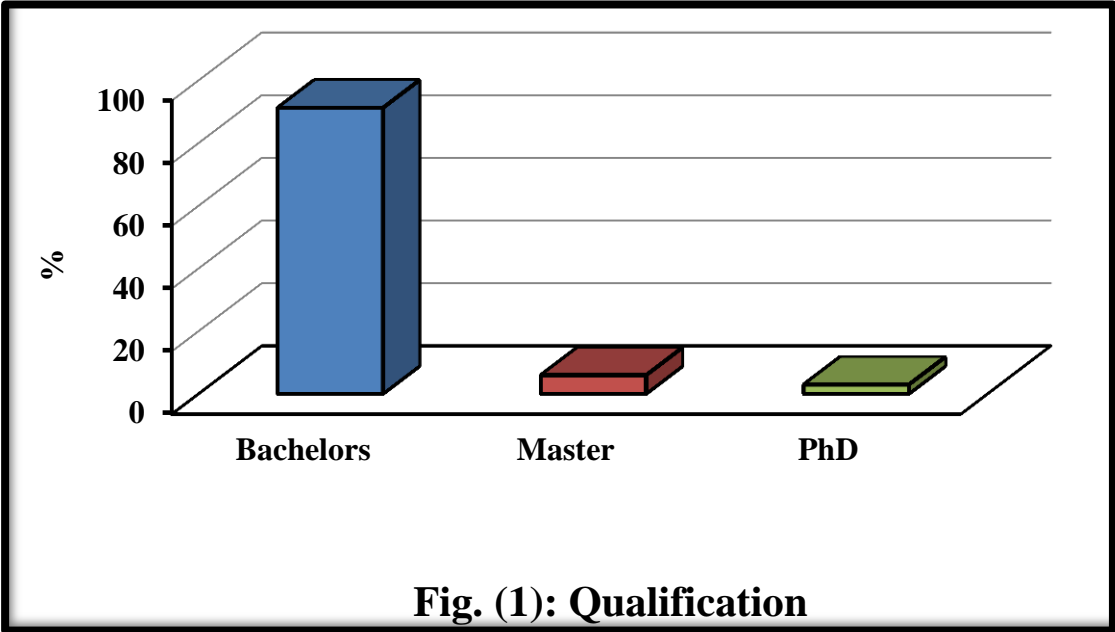
Figure (2): Distribution of study population according to their Years of experience:

Fig. (2): Years of experience

27
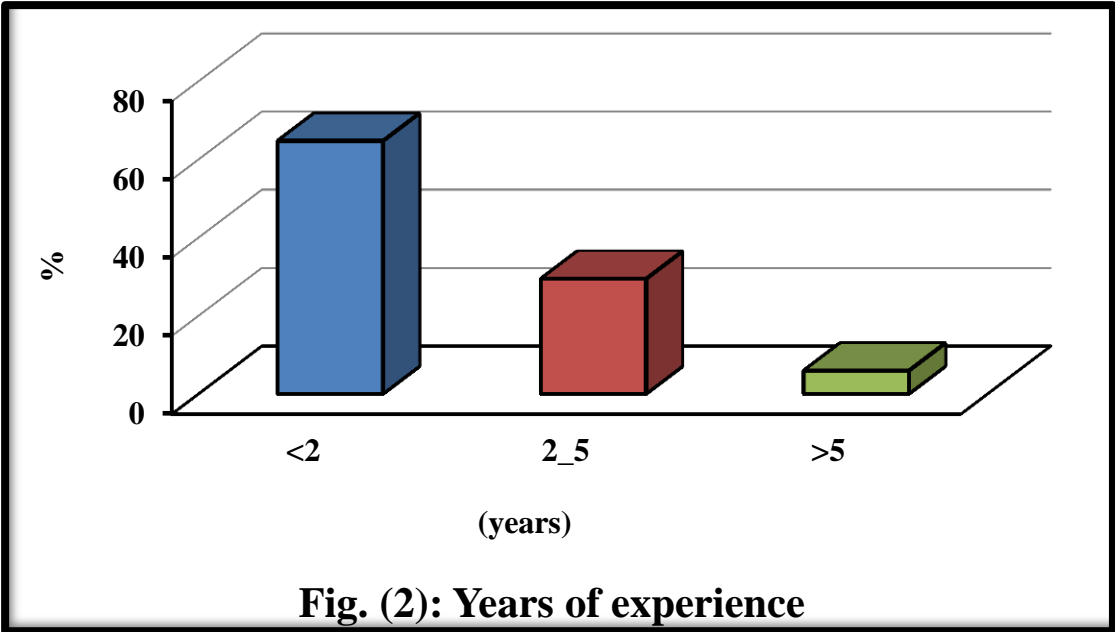
Figure (3): Distribution of study population according to their Working area:

Fig. (3): Working area
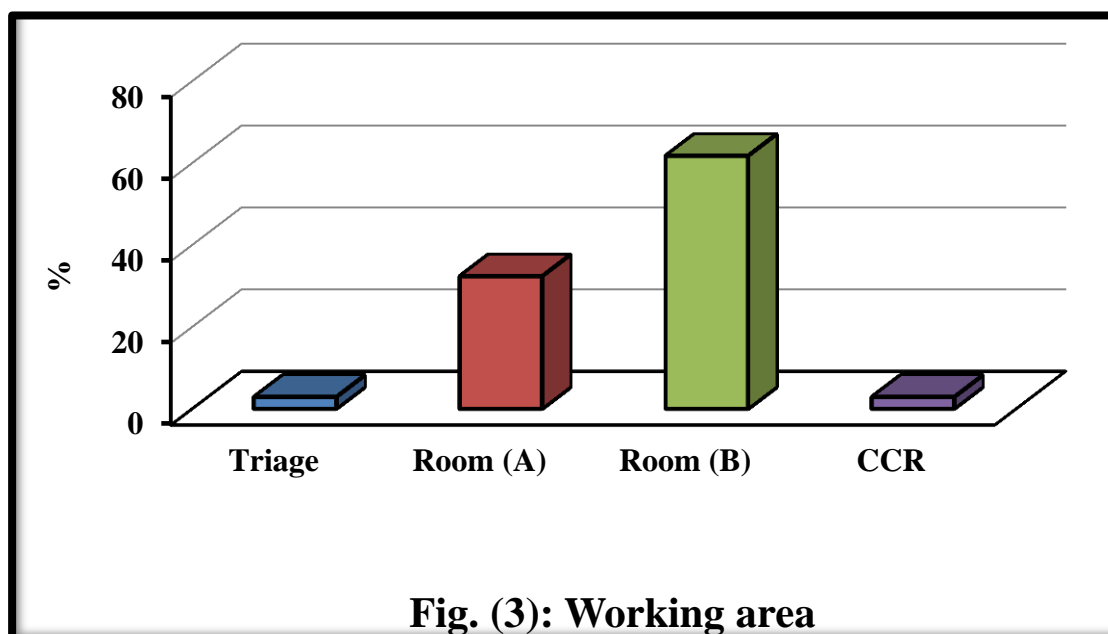
Table (3): Distribution of study population according to their knowledge about definition acute coronary syndrome:

Definition	Frequency	%
Unstable angina	3	8.8
Acute myocardial infraction	4	11.8
Unstable angina and myocardial infraction	26	76.5
Heart failure	1	2.9
Total	34	100%

Table (4): Distribution of study population according to their knowledge about Characteristics of chest pain of ACS:

Knowledge	Frequency	%
Good	14	41.2
Fair	12	35.3
Poor	8	23.5
Total	34	100%

Table (5): Distribution of study population according to their knowledge about Causes of ASC:

Knowledge	Frequency	%
Good	25	73.5
Fair	4	11.8
Poor	5	14.7
Total	34	100%

Figure (4): Distribution of study population according to their knowledge about Risk factors of acute coronary syndrome:

Fig. (4): Risk factors of acute coronary syndrome
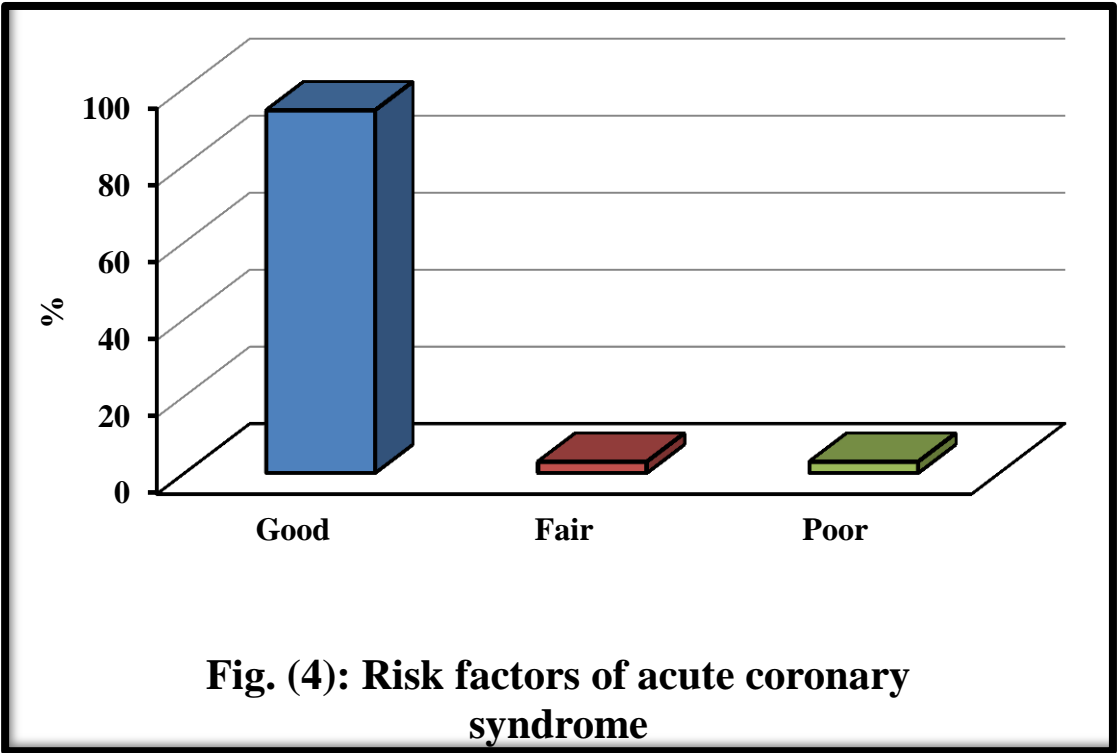
Figure (5): Distribution of study population according to their knowledge about Clinical manifestation of ACS:

Fig. (5): Clinical manifestation of ACS
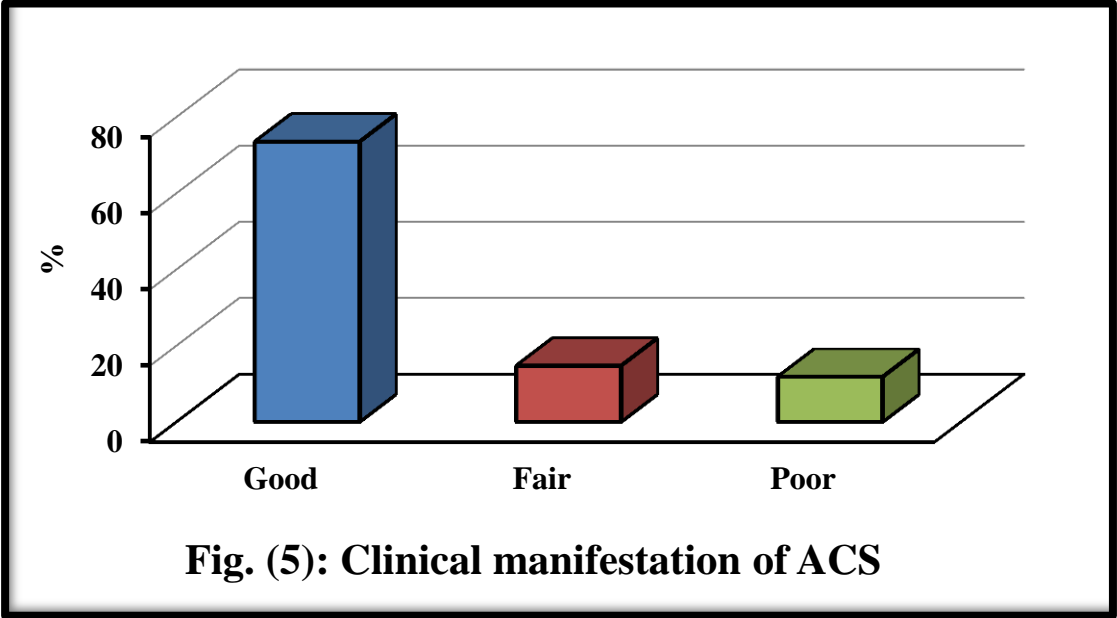
Table (6): Distribution of study population according to their kn owledge about Diagnostic measures to confirm ACS:

Knowledge	Frequency	%
Good	27	79.4
Fair	4	11.8
Poor	3	8.8
Total	**34**	**100%**

Figure (6): Distribution of study population according to their knowledge about Common aggravating and reliving factors:

Fig. (6): Common aggravating and reliving factors
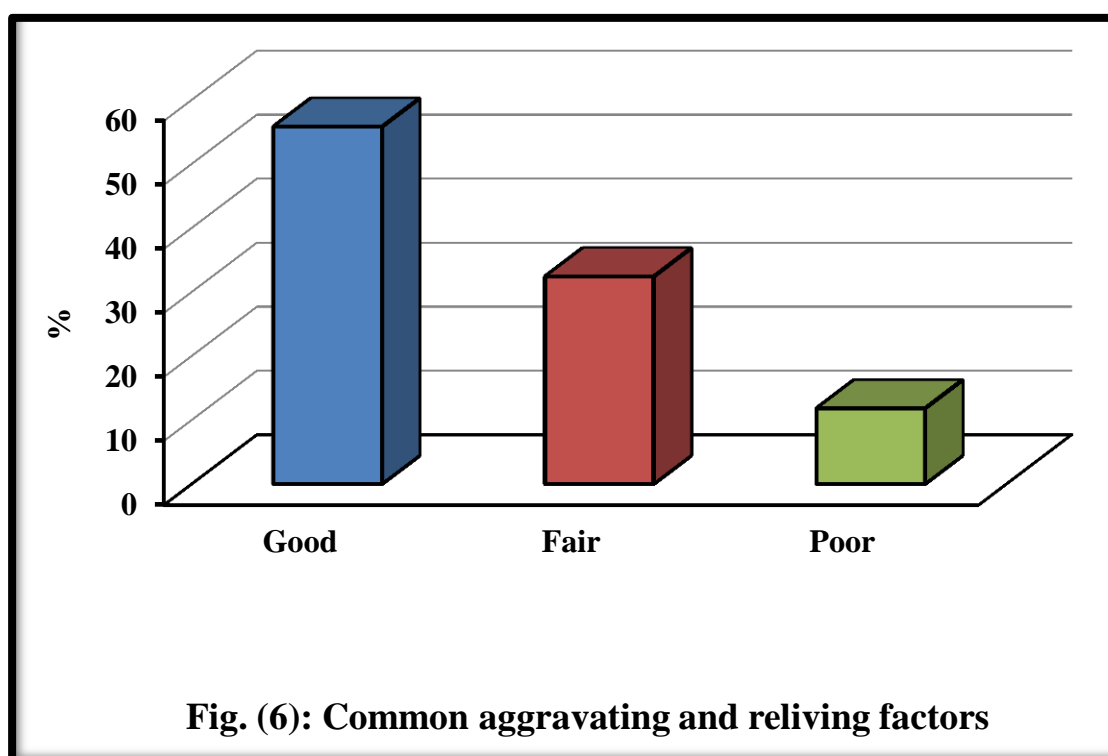
Table (7): Distribution of study population according to their knowledge about radiation of Pain:

Knowledge	Frequency	%
Good	16	47.0
Fair	11	32.4
Poor	7	20.6
Total	**34**	**100%**

Figure (7):Distribution of study population according to their knowledge about The aim of management for patient with acute coronary syndrome:

Fig. (7): The aimof management for patient with acute coronary syndrome
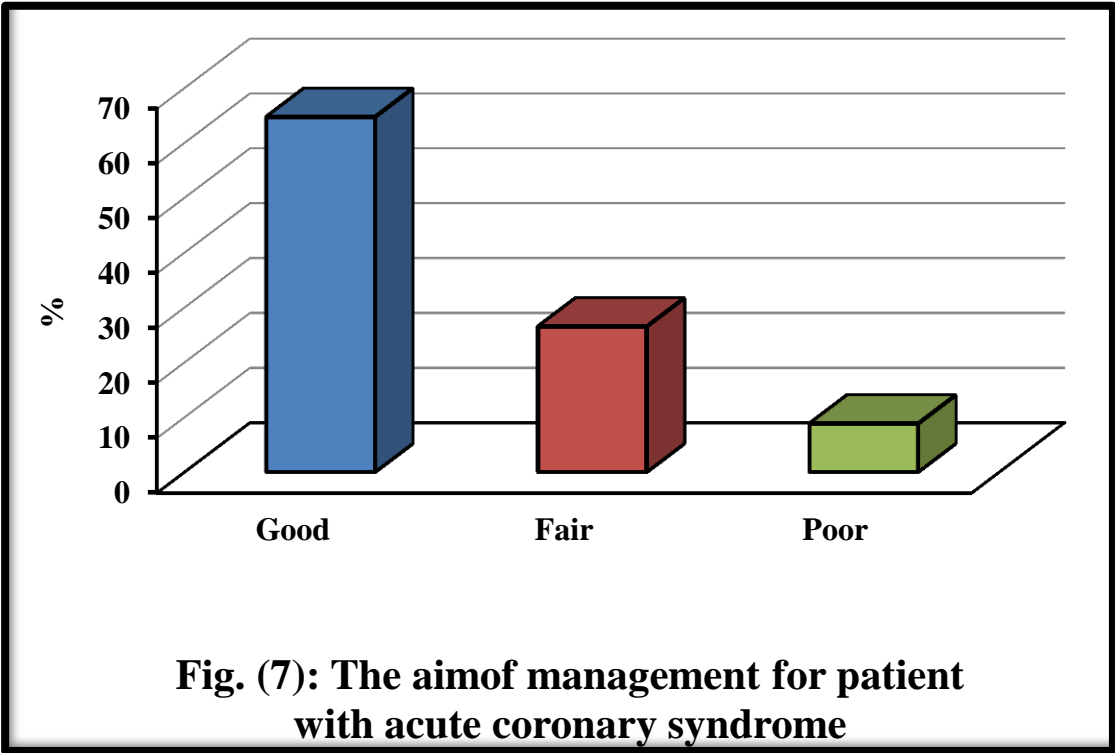
Figure (8):Distribution of study population according to their knowledge about The initialization management for patient with acute coronary syndrome:

Fig. (8): The initialization management for patient with acute coronary syndrome
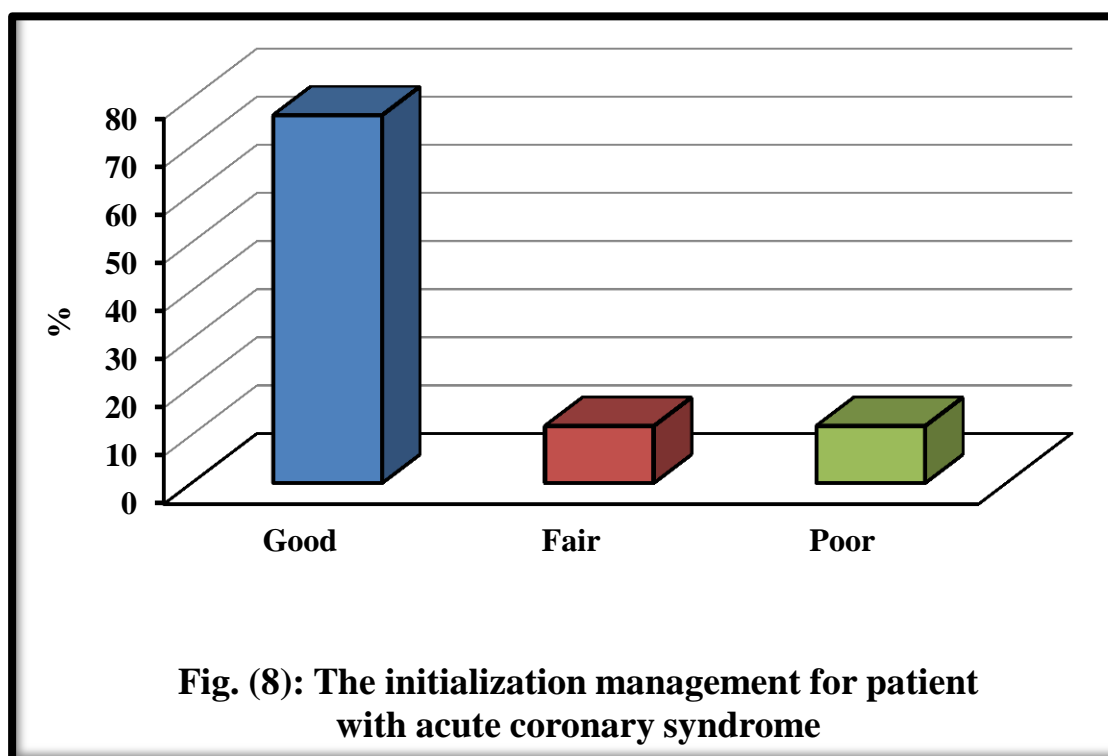
Table (8): Distribution of study population according to their knowledge about nursing management for patient with chest pain:

Knowledge	Frequency	%
Good	29	85.3
Fair	3	8.8
Poor	2	5.9
Total	**34**	**100%**

Table (9): Distribution of study population according to their knowledge about The medical management of an ACS:

Knowledge	Frequency	%
Good	20	58.9
Fair	8	23.5
Poor	6	17.6
Total	**34**	**100%**

Table (10): Distribution of study population according to their knowledge about The surgical management of an ACS:

Knowledge	Frequency	%
Good	17	50.0
Fair	11	32.4
Poor	6	17.6
Total	**34**	**100%**

Figure (9): Distribution of study population according to their knowledge about The nursing consideration in thrombolytic therapy:

Fig. (9): The nursing consideration in thrombolytic therapy
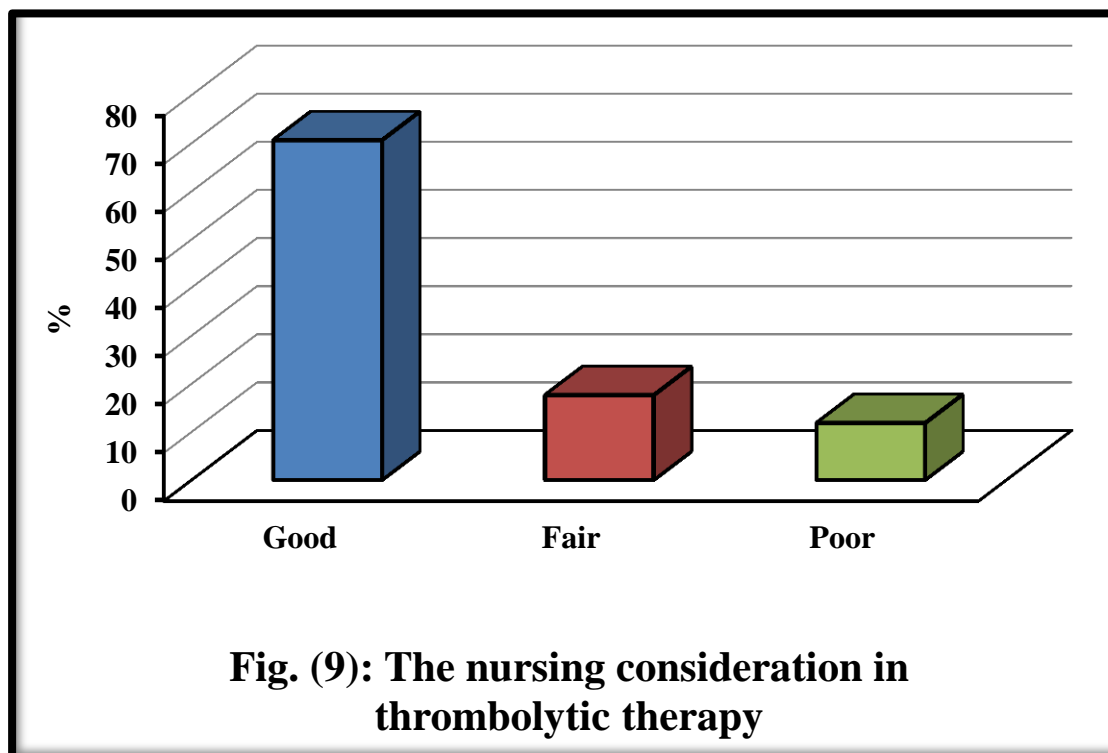
Table (11): Distribution of study population according to their knowledge about Complications of ACS:

Knowledge	Frequency	%
Good	26	76.5
Fair	6	17.6
Poor	2	5.9
Total	**34**	**100%**

Section (2): Relationships

Table (12): Relationship between nurses' academic qualifications and their knowledge scores regarding acute coronary syndrome

Nurse knowledge	Qualifications			P-value
	Bachelors	Master	PhD	
	Mean±SD			
[1] Acute coronary syndrome	0.54±0.50	0.63±0.52	1.00±0.00	0.001**
[2] Causes of ASC	0.71±0.46	1.00±0.00	1.00±0.00	0.043*
[3] Risk factors of acute coronary syndrome	0.92±0.27	1.00±0.00	1.00±0.00	0.172NS
[4] Clinical manifestation of ACS	0.74±0.44	0.88±0.35	1.00±0.00	0.045*
[5] Diagnostic measures to confirm ACS	0.76±0.43	0.50±0.53	1.00±0.00	0.003**
[6] Characterization chest pain of ACS	0.47±0.50	0.38±0.52	0.75±0.50	0.002**
[7] Common aggravating and reliving factors	0.70±0.46	0.63±0.52	1.00±0.00	0.036*
[8] Pain radiation	0.61±0.49	0.50±0.53	1.00±0.00	0.048*
[9] The main management for patient with acute coronary syndrome	0.85±0.36	0.67±0.52	1.00±0.00	0.033*
[10] The initialization management for patient with acute coronary syndrome	0.83±0.38	0.63±0.52	1.00±0.00	0.027*
[11] The nursing management for patient with chest pain	0.83±0.38	0.75±0.46	1.00±0.00	0.048*
[12] The medical management of an ACS	0.69±0.47	0.38±0.52	1.00±0.00	0.00**
[13] The surgical management of an ACS	0.65±0.48	0.63±0.52	1.00±0.00	0.024*
[14] The nursing consideration in thrombolytic therapy	0.73±0.45	0.63±0.52	1.00±0.00	0.019*
[15] The complication of ACS	0.85±0.36	0.63±0.52	1.00±0.00	0.004**

Table (13): Relationship between nurses' experience and their knowledge scores regarding acute coronary syndrome

Nurse knowledge	Years of experience			P-value
	<2 yrs	2-5 years	>5 years	
	Mean±SD			
[1] Acute coronary syndrome	0.51±0.50	0.60±0.50	0.88±0.35	0.002[**]
[2] Causes of ASC	0.73±0.45	0.73±0.45	0.88±0.35	0.047[*]
[3] Risk factors of acute coronary syndrome	0.91±0.29	0.95±0.22	1.00±0.00	0.095[NS]
[4] Clinical manifestation of ACS	0.74±0.44	0.75±0.44	1.00±0.00	0.167[NS]
[5] Diagnostic measures to confirm ACS	0.73±0.45	0.80±0.41	0.75±0.46	0.038[*]
[6] Characterization chest pain of ACS	0.47±0.50	0.48±0.51	0.50±0.53	0.066[NS]
[7] Common aggravating and reliving factors	0.65±0.48	0.78±0.42	1.00±0.00	0.022[*]
[8] Pain radiation	0.58±0.50	0.70±0.46	0.63±0.52	0.549[NS]
[9] The main management for patient with acute coronary syndrome	0.80±0.40	0.90±0.31	1.00±0.00	0.037[*]
[10] The initialization management for patient with acute coronary syndrome	0.78±0.41	0.88±0.33	1.00±0.00	0.041[*]
[11] The nursing management for patient with chest pain	0.82±0.39	0.85±0.36	0.88±0.35	0.292[NS]
[12] The medical management of an ACS	0.61±0.49	0.78±0.42	0.88±0.35	0.035[*]
[13] The surgical management of an ACS	0.68±0.47	0.63±0.49	0.63±0.52	0.083[NS]
[14] The nursing consideration in thrombolytic therapy	0.73±0.45	0.70±0.46	0.88±0.35	0.049[*]
[15] The complication of ACS	0.84±0.37	0.80±0.41	1.00±0.00	0.026[*]

Chapter Five

5.1Discussion

Acute coronary syndrome is a disease characterized by reduced blood flow in coronary artery, This is a descriptive hospital based study was conducted To assess nurses knowledge regarding initial care of patient with Acute coronary syndrome in Omdurman military hospital, triage , room(A,B,CCR), at period extended from (May to November 2018). A total of 34 nurses who participate in the study, with (67.6%) of their age22-24. majority were male (55.9%), the majority of participant are bachelors' degree holders (91.2%) Most of them (64.7%) their experience fewer than 2 years, the high percentage of bachelors' degree holders is explained by the fact that the public health service system in Sudan has established recruitment of nurses at bachelors level. Regarding knowledge about condition related ACS The study reflect that more than half (76.5%) of study group had good Knowledge about definition of ACS, this result analogical with previous study conducted State hospital in East Texas on November-2000 by CAROL G .Price which found that 47% of respondent had agood knowledge in their opinion regarding definition of ACS. [9]

most of them had a adequate knowledge regarding characteristics of chest pain (41.2%), The study showed that about(73.5%), Nurses had good knowledge regarding causes of ASC ,and represent high knowledge regarding risk factors of acute coronary syndrome (94.2%), this result analogical with previous study conducted at Elmek Nimer university hospital in sudan 2016which found that

more than half (57%) of study group had good knowledge about causes and risk factors of ACS,[10]

the knowledge about causes and risk factor help nurse to raise the patient awareness about the prevention of disease and make a good nursing care, The study clarified that about two third (73.5%), of nurses participating in the study having adequate knowledge regarding clinical feature of ACS, and more than Tow third (79.4%), were good knowledge about common diagnostic tests of ACS

disease which affect wildly and improving nursing performance, nursing assessment and care. The study showed that about more than half (55.8%), of study group had good Knowledge about aggravated and reliving factor of the chest pain and most of them had a adequate knowledge regarding radiation of pain represent (47%).The study found more than half (57%) of study group had good Knowledge about aim of management for patient with acute coronary syndrome represents (64.7%). The study reflected that about (94.2%),of study group had a good knowledge regarding the initialization management for patient with acute coronary syndrome, the nurse is the first one face the patient in emergency room therefore nurse must be have a good knowledge to reach the aim of nursing management for ACS in acute phase, while more than Tow third(85.3%), of study group had a good knowledge regarding nursing management of ACS. The study presented that more than half(58.9%), of study group had a good knowledge regarding the medical management of an ACS and most of them (50%), had moderate knowledge regarding the surgical management of an ACS ,the majority of nurses(70.6%), had good knowledge regarding the nursing consideration in thrombolytic therapy, and its complication this may decrease causes of loss the Golding time of the thrombolytic therapy and decrease incidence of complication and even death, The study clarified that about (76.5%), of study group had good knowledge about complications of ACS,.

There was significant association between nurses' academic qualifications and their knowledge regarding acute coronary syndrome that show strong correlation between knowledge and qualification , Highly significant difference (P=0.0) was found in medical management, Significant difference (P=0.048) was observed in nursing management The initialization management for patient with acute coronary syndrome Significant difference (P=0.027) was observed. Complication of ACS Highly significant difference (P=0.019) was found. The relationship between nurses' years of experience and their knowledge scores regarding acute coronary syndrome, The initialization management for patient with acute coronary syndrome the test shows significant difference (P=0.041)was observed. The

nursing consideration in thrombolytic therapy Significant difference (P=0.049) was observed. The complication of ACS and knowledge scores of nurses their experience shows significant difference (P=0.026).

5.2 conclusions

This descriptive study conducted in Omdurman military hospital Based on finding of presented study it was concluded that:

Most of study group had bachelor degree and most of them work in room (A and B) about more than half of study group had knowledge about definition of acute Coronary syndrome. About half of study group had good knowledge about initial management of ACS. About tow third of study group had moderate knowledge about assessment of pain of ACS, The majority of study group had good knowledge regarding management of ACS.

5.3   Recommendations:

According to the findings of the current study, and conclusion it was recommended that:The hospital management, have to:

− Routine supportive supervision of nursing staff working in Emergency department (ED) units after training and focusing on medication and nursing care (reassurance and psychological support for patient and family and educating patients).

− Educational sessions are necessary to improve the nurse's ability dealing with management with such diseases.

− Further studies are needed to elaborate the effects of different variables on the knowledge of nursing.

− Updating training programs especially for the nurse work in emergency department and critical care unit.

Chapter Six

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بسم الله الرحمن الرحيم

Republic of Sudan

Ministry of Higher Education and scientific Research

Shendi University

Faculty of Graduate Studies and Scientific Research

Questionnaire on

Assessment of nurse's knowledge regarding initial care of patient with acute coronary syndrome.

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

Many questions require more than one correct answer to be chosen.

Part (1): BIOGRAPHIC DATA:

Serial no: -------------------

1. **Age in years:_____**
2. **Gender: Male** [ ]   **Female** [ ]
3. **Qualification:**
   - PSc [ ]
   - MSc [ ]
   - PHD [ ]

4. **Years of experiences**

   Less than 2years [ ]   2 – 5 years [ ]   more than 5 years [ ]

5. **Working area: Triage** [ ]   Room(A) [ ]   Room (B) [ ]

Part (2): knowledge regarding acute coronary syndrome:

1. **Acute coronary syndrome can be define as:**

   a) Unstable angina. [ ]   b) Acute myocardial infarction. [ ]

   4[ ]   [ ]

c) Unstable angina and myocardial infarction.   d) Heart failure.

2. The Causes of ACS :

a) Atherosclerosis.

b)   In adequate blood flow to the myocardium.

c) Decrease in the oxygen available in the myocardium.

d) Risk factors for the development of ACS.

3. risk factors of acute coronary syndrome include :

a)Diabetes and Hypertension.   b) Family history.

c) Smoking.   d) Obesity and stress.

4. The clinical manifestation of ACS include:

a) Chest pain / sub sternal/ epigastric pain.

b) Tachycardia and increase respiratory rate.

c) Sweating.   d) Nausea and vomiting.

5. The diagnostic measures to confirm ACS include:

a)   ECG.   b) Echocardiography.

c)   Cardiac marker (troponine + creatinine kinase C.K-MB).

d) Laboratory test.

6. The chest pain of ACS characterized by:

a) Heaviness   .   b) Gradually onset.

c) Colic.   d) Stabbing.

7. Common aggravating and Reliving factors:

a) Physical exertion.   b) Stress.

c) Bed rest.   d) Nitroglycerin.

8. The pain is radiated to:

a) Arm and shoulder.   b) Neck.

c) Back.   d)Posterior intrascapular area.

9. The aim of management for patient with acute coronary syndrome:

a)Minimizing myocardial damage.

b) Preserve myocardial function.

c) Prevent complication.

10. The initial nursing management for patient with acute coronary syndrome:

a) 12 lead ECG.   b) Nitrate, asprin and oxygen.

45

c) Observe vital sign.   d)Cardiac monitoring and Cardiac position.

11.The nursing management for patient with chest pain:

a)Measure BP,HR with each episode of chest pain.   ☐

b) Comfortable position.   ☐

c) Maintain quite environment.   ☐

d) Administer pain killer as order or as protocol.   ☐

12.The medical management of an ACS include:

a)Anticoagulant.   ☐   b) Antiarrhythmi   ☐

c)Diuretics and Thrombolytic.   ☐   d)Beta blockers and ACE. ☐

13.The surgical management of an ACS are:

a)Percutaneous coronary intervention(PCI).   ☐

b) Coronary artery bypass graft(CABG).   ☐

c) Invasive direct coronary artery bypass.   ☐

d) Heart transplantation.   ☐

14.The nursing consideration in thrombolytic therapy include:

a) Avoid intramuscular injections.   ☐

b) Draw blood for laboratory tests when starting the IV lines.   ☐

c)start IV lines before thrombolytic therapy designate one line to use for

Blood draws.   ☐

d) Check for sign and symptoms of bleeding.   ☐
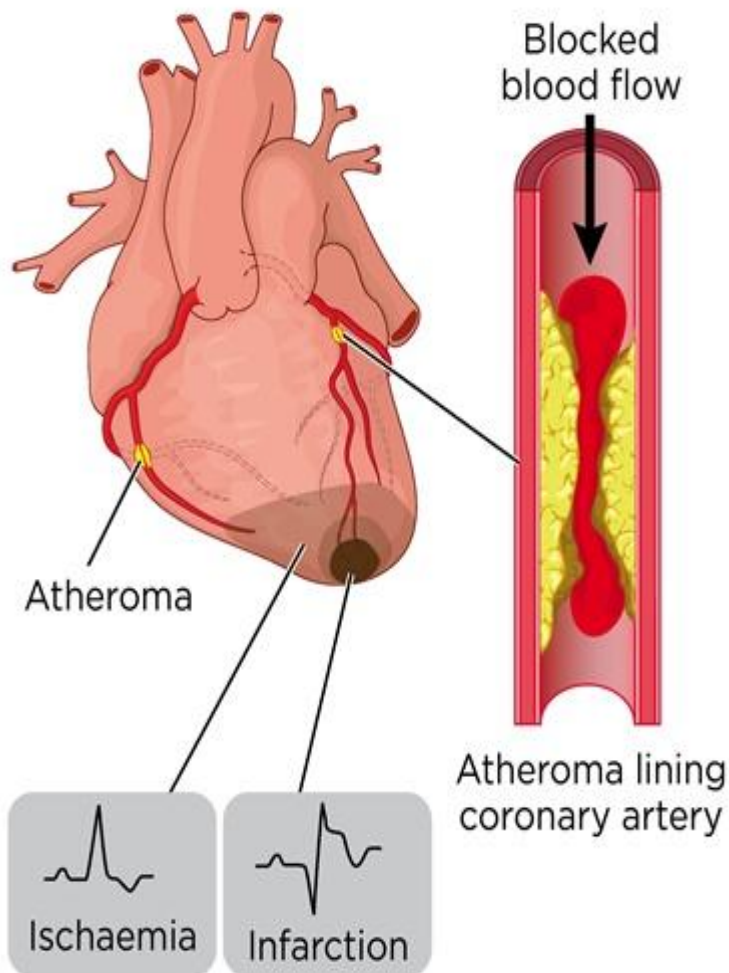
15.The complication of ACS include:

a)Arrhythmia.   ☐   b) Myocardial rupture.   ☐
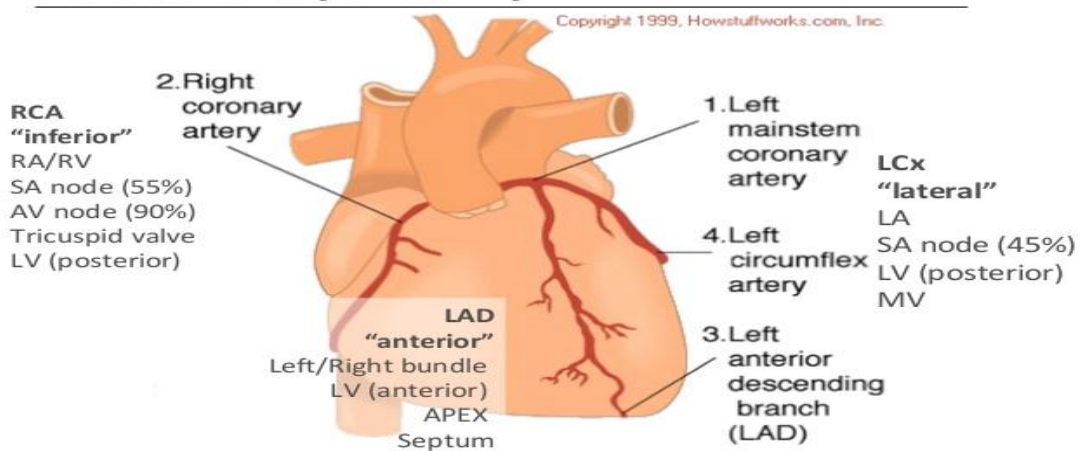
c) Sudden death.   ☐   d) Cardiac arrest.   ☐
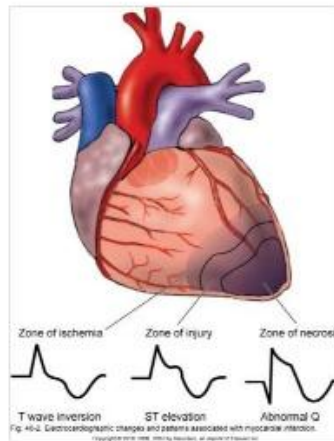
Thank you very much for your cooperation

Atheroma

Blocked blood flow

Atheroma lining coronary artery

Ischaemia   Infarction
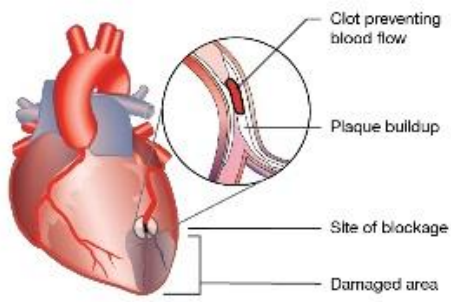
ACS = acute coronary syndrome. STEMI = ST segment elevation myocardial infarction

ACS: Coronary anatomy

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RCA
"inferior"
RA/RV
SA node (55%)
AV node (90%)
Tricuspid valve
LV (posterior)

2.Right coronary artery

1.Left mainstem coronary artery

4.Left circumflex artery

3.Left anterior descending branch (LAD)

LCx
"lateral"
LA
SA node (45%)
LV (posterior)
MV

LAD
"anterior"
Left/Right bundle
LV (anterior)
APEX
Septum

ACUTE CORONARY SYNDROME

Dr RAHUL VARSHNEY