University of Qadisiyah

College of Nursing

Assessment of Nurses' knowledge about Risk Factors for Bleeding in Patients Acute Pulmonary Embolism Receiving Thrombolytic Therapy at Cardiac Care Unit in Al-Diwaniyah Teaching Hospital

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بسم الله الرحمن الرحيم

((وَأَنزَلَ اللَّهُ عَلَيْكَ الْكِتَابَ وَالْحِكْمَةَ وَعَلَّمَكَ مَا لَمْ تَكُن تَعْلَمُ ۚ وَكَانَ فَضْلُ اللَّهِ عَلَيْكَ عَظِيمًا))

صدق الله العلي العظيم

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DEDICATION

I dedicate this humble work To:

- *The messenger of mercy to people, his family ,and his companions.*
- *My beloved country Iraq, my family, mainly my father, my mother, my brothers, my sisters who were ready to sacrifice everything to support my progress.*
- *My instructor, Assistant. Teacher. bahaa mirza scal with all my respect.*
- *My dear friends, I am very grateful for their tremendous help.*
- *All sophisticated nurses in all over the world, who face the COVID-19 to do their best in caring patients as possible.*

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Abstract

Back ground: Thrombolytic therapy is usually reserved for patients with clinically serious pulmonary embolism (PE). Evidence suggests that thrombolytic agents may dissolve blood clots more rapidly than heparin and may reduce the death rate associated with PE. Risk factors/contraindications thrombolytic therapy are absolute and relative.

Objectives: The present study aims to assess nurses' knowledge toward risk factors for bleeding in patient with PE at Cardiac Care Unit (CCU) in Al-Diwaniyah Teaching Hospital, and find out association between nurses' knowledge and their demographic characteristics.

Methodology: A quantitative descriptive study design has been carried out. The period of the study started from (1th of November, 2022) to (1th of March, 2023) on a non-probability (purposive) sample consisting of (40 nurses) working in CCU.

To find out nurses' knowledge toward risk factors for bleeding in patient with PE, the researcher utilizes the instrument that is composed of two parts: part one is demographic data form to participate in the study and part two knowledge thrombolytic therapy and PE form included (20) items. The validity of the questionnaire was examined by submitting it to (13) experts, and a pilot study was performed to realize the reliability of the questionnaire (Pearson correlation coefficient=0.86). For analyzing the findings of the study, it was utilizing descriptive and inferential statistics that employ the Statistical Package of Social Sciences (SPSS) and the Microsoft Excel (2016).

Results: The results of this study shows that more than two third of the study sample was fair at percentage (67.5%) and mean (1.44) level of nurses' knowledge toward risk factors for bleeding in patient with PE.

Conclusion: The researcher concluded that the nurses' knowledge was (fair), toward contraindications for bleeding in patient with PE at CCU.

Recommendations: This study recommended that working educational courses and improve nurses' knowledge toward risk factors for bleeding in patient with PE especially nurses working in CCU, and there is a need to perform similar studies at a larger sample size and sufficient period of time.

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List of Acronyms & Symbols

Items	Meaning
%	Percent
&	And
∑	Summation of
≤	Less than or equal
≥	More than or equal
CT	Computed tomography
CCU	Cardiac Care Unit
CO	Cardiac output
CPR	Cardiopulmonary resuscitation
D.F	Degree of Freedom
DVT	Deep Vein Thrombosis
DIC	Disseminated intravascular coagulation
ECMO	Extacorporeal membrane oxygenation
e.g.	Example Gratia (For Example)
et Al.	And Others
F	Frequency
FFP	Fresh frozen plasma
HS	High Significant
INR	International Normalized Ratio

ICH	Intracranial hemorrhage
LMWH	Low-molecular-weight-heparin
M	Mean
MCQ	Multiple Choice Questions
MI	Myocardial Infarction
MOH	Ministry of Health
N	Number of Cases
N_0	Null hypothesis
N_1	Alternative hypothesis
NOACs	Newer oral anticoagulants
PE	Pulmonary embolism
PT	Prothrombin time
SD	Standard Deviation
SPSS	Statistical Package for the Social Sciences
SBP	Systolic blood pressure
TpA	Tissue plasminogen activator
UFH	Unfractionated heparin
VKA	Vitamin K antagonistic
VTE	Venous thrombus embolism
WHO	World Health Organization
X	Individual's Score of Variable X
Y	Individual's Score of Variable Y

Chapter One

Introduction

Chapter One
Introduction

1.1. Introduction

Pulmonary embolism (PE) is a type of venous thromboembolism that is frequent and potentially fatal, and it can be difficult to detect and treat. PE occurs when the pulmonary vasculature is clogged, and it is a common reason of morbidity and mortality in the United States. In the development of this condition, a combination of acquired and inherited factors may play a role, and they should be taken into account because they affect PE susceptibility and therapy (Freund et al.,2022).

Pulmonary embolism is the obstruction of a lung vessel or vessels by a thrombus. Pulmonary emboli are caused by the blockage of the pulmonary arterial system, disrupting the capacity of the lung to correctly oxygenate blood from the venous circulatory system. While there are several causes of these blockages, including air, fat, and amniotic fluid, the most common cause results from a venous clot that typically travels from a deep vein thrombosis (DVT) in the lower extremity (Yoo et al., 2022).

Early diagnosis and treatment of PE reduce morbidity and mortality If not treated early, a pulmonary embolism can be life- threatening. About one-third of people with undiagnosed or untreated pulmonary embolism die from the condition. Early treatment greatly reduces the risk of death (Zuo et al., 2021).

Prevention is the primary goal of nursing care for patients at risk for developing PE. The best management of pulmonary embolism is through prevention of DVT. Deep Venous Thrombosis must be used routinely for any hospitalized patients. The nurse must recognize risk factors for pulmonary embolism and vigilantly monitor patients (Bonyan et al., 2020).

Thrombolytic therapy is given, as a preference in treatment pulmonary embolism, improves suffering from a disease and rating of the dying by breaking down the clot in the blood vascular and achieving reperfusion, preserves the left ventricular activity. Moreover, it is dissolving the thrombosis, by transforming the plasminogen to plasmin, that allows fibrin and fibrinogen to deteriorate (Skal, & Ahmed, 2021).

It is most effective treatment if delivered during three hours of appearance of the symptoms. While advantages are limited if initiated over twelve hours after the symptoms began, for the several years to come, will continue to play a significant role in managing pulmonary embolism, it should be given rapidly (Shaaban Khalil et al., 2018).

Bleeding is the general frequent complication of the thrombolytic therapy in patient with Pulmonary embolism and could happen on puncture location or suddenly within the body. Intracranial bleeding or the hemorrhagic stroke has been the most major problem. Knowing the contraindication of bleeding can help determine whether thrombolytic therapy should be administered to patients (Baig & Bodle, 2020).

In this study, the important contraindication involved the major surgery over the past three weeks, internal hemorrhage over the past four weeks, the high blood pressure, acute myocardial infarction, a stool occult positive hemorrhaging, the existence of gastrointestinal hemorrhaging previous to three month, race African-American, balloon pump intra-aortia, the cardiopulmonary resuscitation for more than ten minutes, aortic dissection, acute pancreatitis, however a women was independently related to the levels of severe extra cranial bleeding, progressing age of more than 75 years old, bilirubin more than 3 mg/dL, and dementia (Daley et al., 2015).

1.2. Importance of Study

Patients have PE undergoing the thrombolytic therapy should give a regular neurological and cardiovascular valuation with the blood pressure testing every 15 minutes during and after thrombolytic treatment injection at least to two hours, then half-hourly to the six hours and hourly for the next 16 hours after infusion, rigorous blood pressure control is important for the prevention of the problems. This medication should be stopped immediately with any indications of neurological disorder; patient should be obtaining an emergency computed tomography (CT). Thrombolytic agents or other anticoagulants should be removed immediately for any a sign of the bleeding problems in a patient. In addition, helpful steps, including the size adjustment and blood transfusion factor, should be implemented over the next measure (Kaufman et al., 2018).

This research was set up to improve nursing care by increasing cardiac care nurses' expertise through assessing their knowledge about risk factors of bleeding in acute PE patients receiving thrombolytic therapy. The data in this study contribute to improving the nursing care of patients with acute PE who are suitable for thrombolysis. Few research studies have been conducted nationally to evaluate CCU nurses' knowledge of thrombolytic therapy. This research might raise interest in further investigation in this area (The researcher).

1.3. Statement of the Problem

The present study deals with risk factors for bleeding with patients PE receiving thrombolytic therapy that should be administrate by nurses in the cardiac care units to improve the nursing care in the units. Therefore, the problem of the present study is Assessment of Nurses' knowledge about Risk Factors for Bleeding in Patients Acute Pulmonary Embolism Receiving Thrombolytic Therapy at Cardiac Care Unit in Al-Diwaniyah Teaching Hospital.

1.4. The Study's Objectives are:

1. To assess nurses' knowledge toward contraindications for bleeding in patient's acute pulmonary embolism receiving thrombolytic.

2. To find out the relationship between the nurses' knowledge and demographic characteristics.

1.5. Hypothesis

It is hypothesized that the results may show:

1. N_0:

There is no relationship nurses' knowledge and contraindications for bleeding in patient's acute pulmonary embolism receiving thrombolytic.

2. N_1:

There is relationship nurses' knowledge and contraindications for bleeding in patient's acute pulmonary embolism receiving thrombolytic.

1.6. Definitions of Terms:

1.6.1. Nurses

1.6.1. a. Theoretical Definition:

An individual that takes care of the patients, that works independently, or is supervised by a specialist and who is trained to promote and preserve health (Mosher, 2018).

1.6.1. b. Operational Definition:

The person responsible for delivering nursing care to patients with ST-segment elevation myocardial infarction, have a degree in nursing and are trained and qualified to perform the nursing profession.

1.6.2. Knowledge

1.6.2. a. Theoretical Definition:

Truth, skills, and knowledge gained from experiment or teaching ;theoretical or work understanding of the topic (English Oxford Living Dictionaries, 2018).

1.6.2. b. Operational Definition

It is the capacity of nurses who provide thrombolytic therapy to the patients acute PE to get information and truth regarding risk factors for bleeding and to progress their health practices.

1.6.3. Contraindications

1.6.3. a. Theoretical Definition

Something which raises the opportunity for contracting a disease. Examples of risk factors to cancer include exposure for radiation, age, utilization alcohol and cigarettes, or other chemical, contamination with other microorganism, and other genes involved (Bignold, 2019).

1.6.3.b. Operational Definition

It is a variable associated with an increased risk of bleeding in acute PE patients receiving thrombolytic therapy.

1.6.4. Bleeding

1.6.4. a. Theoretical Definition:

Bleeding is a blood loss from the systemic circulation. etiology may vary through minor small injuries to big cuts and amputations. Injuries for the body may also lead to internal hemorrhage that can vary from mild to severe hemorrhage (Adolfsson, 2020).

1.6.4.b. Operational Definition:

It is the loss of blood from the blood vessels to the outside of the circulation due to the presence of risk factors for acute PE patient after using a thrombolytic therapy.

1.6.5. Acute Pulmonary Embolism

1.6.5. a. Theoretical Definition:

A common clinical condition with a variable clinical presentation, making its diagnosis challenging (Freund et al.,2022).

1.6.5.b. Operational Definition:

Occurs when there is a disruption to the flow of blood in the pulmonary artery or its branches by a thrombus that originated somewhere else.

1.6.6. Patient

1.6.6. a. Theoretical Definition:

One that is getting medical interest, therapy or care (Tweely and Mhammad, 2018).

1.6.6. b. Operational Definition:

The person seeking medical and nursing services has acute PE and suffering from it.

1.6.7. Thrombolytic Therapy

1.6.7. a. Theoretical Definition:

It is used to remove harmful blood vessel clots to avoid ischemic harm by improving blood flowing (Visovsky et al., 2018)**.**

1.6.7.b. Operational Definition:

It is used for acute PE patients to improve blood flow through dissolve unhealthy blood vessel clots.

Chapter Two

Review of Literature

Chapter Two

Review of Literature

Chapter two presents the reviews of studies and theories that support the subject of present research.

2.1. Background

Pulmonary embolism (PE) occurs when there is a disruption to the flow of blood in the pulmonary artery or its branches by a thrombus that originated somewhere else. In deep vein thrombosis (DVT), a thrombus develops within the deep veins, most commonly in the lower extremities. PE usually occurs when a part of this thrombus breaks off and enters the pulmonary circulation. Very rarely, PE can occur from the embolization of other materials into the pulmonary circulation such as air, fat, or tumor cells.The spectrum of PE and DVT combined is referred to as venous thromboembolism (VTE) (Coon & Willis, 1959).

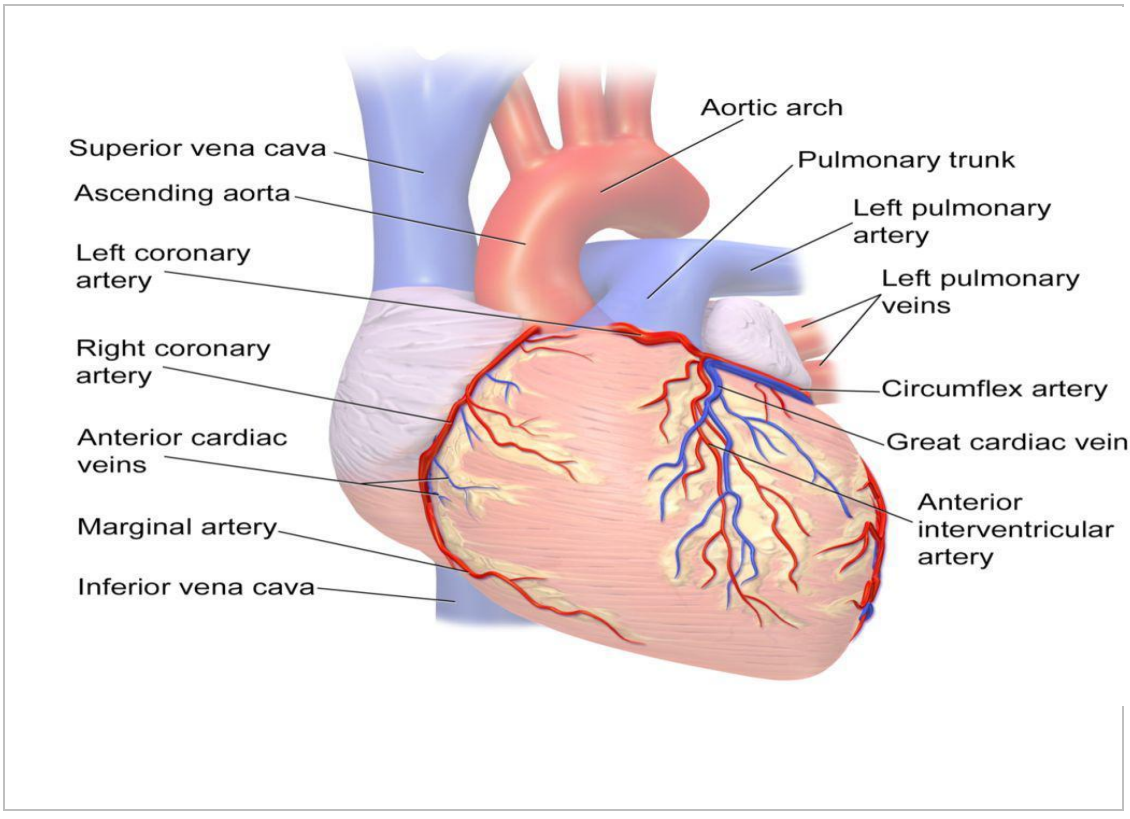

Figure (2.1) The Coronary Circulation (Anterior) (Omran, 2019; p. 18)

2.2. Etiology

Most pulmonary embolisms originate as lower extremity DVTs. Hence, risk factors for pulmonary embolism (PE) are the same as risk factors for DVT. Virchow's triad of hypercoagulability, venous stasis, and endothelial injury provides an understanding of these risk factors.

Risk factors can be classified as genetic and acquired. Genetic risk factors include thrombophilia such as factor V Leiden mutation, prothrombin gene mutation, protein C deficiency, protein S deficiency, hyperhomocysteinemia, among others. Acquired risk factors include immobilization for prolonged periods (bed rest greater than three days, anyone traveling greater than 4 hours, whether by air, car, bus, or train), recent orthopedic surgery, malignancy, indwelling venous catheter, obesity, pregnancy, cigarette smoking, oral contraceptive pill use, etc (Cohoon et al., 2020).

2.3. Types of Pulmonary Embolism

It is extremely crucial to divide PE based on the presence or absence of hemodynamic stability. Hemodynamically unstable PE (previously called massive or high-risk PE) is PE which results in hypotension (as defined by systolic blood pressure (SBP) less than 90 mmHg or a drop in SBP of 40 mm Hg or more from baseline or hypotension that requires vasopressors or inotropes), the old term "massive" PE does not describe the size of the PE but describes its hemodynamic effect. Patients with hemodynamically unstable PE are more likely to die from obstructive shock (i.e., severe right ventricular failure).

2.4. Pathophysiology

Hemodynamically stable PE is a spectrum ranging from small, mildly symptomatic or asymptomatic PE (low-risk PE or small PE) to PEs, which cause mild hypotension that stabilizes in response to fluid therapy, or

those who present with right ventricle dysfunction (submassive or intermediate-risk PE), but is hemodynamically stable (Prandoni et al., 2009).

Pulmonary embolism occurs when clots break off and embolize into the pulmonary circulation. Pulmonary emboli are typically multiple, with the lower lobes being involved more frequently than the upper, and bilateral lung involvement being more common.Large emboli tend to obstruct the main pulmonary artery, causing saddle embolus with deleterious cardiovascular consequences. In contrast, smaller sized emboli block the peripheral arteries and can lead to pulmonary infarction, manifested by intra-alveolar hemorrhage. Pulmonary infarction occurs in about 10% of patients. PE leads to impaired gas exchange due to obstruction of the pulmonary vascular bed leading to a mismatch in the ventilation to perfusion ratio because alveolar ventilation remains the same, but pulmonary capillary blood flow decreases, effectively leading to dead space ventilation and hypoxemia. (Morrone & Morrone, 2018).

2.5. Treatment / Management

2. 5. 1.The Supportive Measures

The initial approach to patients with pulmonary embolism (PE) should focus on supportive measures. Supplemental oxygen is indicated in patients with oxygen saturation <90%. Mechanical ventilation (non-invasive or invasive) should be utilized in unstable patients, but providers should be mindful of the adverse hemodynamic effects of mechanical ventilation. Acute RV failure is the leading cause of death in patients with hemodynamically unstable PE. Aggressive volume resuscitation in such patients can over distend the RV, worsen ventricular interdependence, and reduce cardiac output (CO). Hence, in patients with massive PE, intravenous fluid resuscitation should be tried only in patients with collapsible IVC/intravascular depletion. Vasopressors might be needed for hemodynamic support. Mechanical cardiopulmonary support devices, such

as extracorporeal membrane oxygenation (ECMO), may be used in hemodynamically unstable patients with pulmonary embolism.

2.5.2. Anticoagulation

It is vital to remember that the mainstay of treatment of acute PE is anticoagulation. It is important to note that either low-molecular-weight heparin (LMWH) or fondaparinux or unfractionated heparin (UFH) can be used for anticoagulation in acute PE. LMWH and fondaparinux are preferred since they have a less incidence of inducing major bleeding and heparin-induced thrombocytopenia UFH is usually only used in patients with hemodynamic instability in whom primary reperfusion treatment might be required, or in patients with renal impairment. Newer oral anticoagulants (NOACs) and vitamin K antagonists(VKA) can also be used for anticoagulation in PE (Cossette et al., 2010).

2.6. Complications

The major complications associated with pulmonary embolism (PE) include the following:

- Recurrent thromboembolism
- Chronic thromboembolic pulmonary hypertension
- Right heart failure
- Cardiogenic shock (Goliszek et al., 2014).

2.7. Thrombolytic Therapy

It is one of the main components for dissolving of blood thrombus. It is the most prevalent treatment utilized in acute PE protection ischemic harm by make efficient blood flow through dissolve severe occurring within a blood vessel clots. An essential enzyme that dissolves clots in the blood, a fundamental action involving stimulation of the transformation of plasminogen into plasmin (Wang et al., 2020).

Any appearance within a blood vessel clot without an injury that obstructs blood flow is thought to be abnormal, and the shape is assumed to

be closed to focus areas of tissue damage. It restricts bleeding from injury to large or small blood vessels through a major physiological response called thrombosis. The abnormal clot may separate and wandering to prevent downstream blood vessel lumen and may increase to full objection of the arterial lumen. During the acute and sub-acute periods after acute myocardial infarction, myocardial dysfunction often occurs. Successful early reperfusion of the infraction by intervention such as thrombolysis can contribute to rapid improvement (Baig & Bodle, 2020).

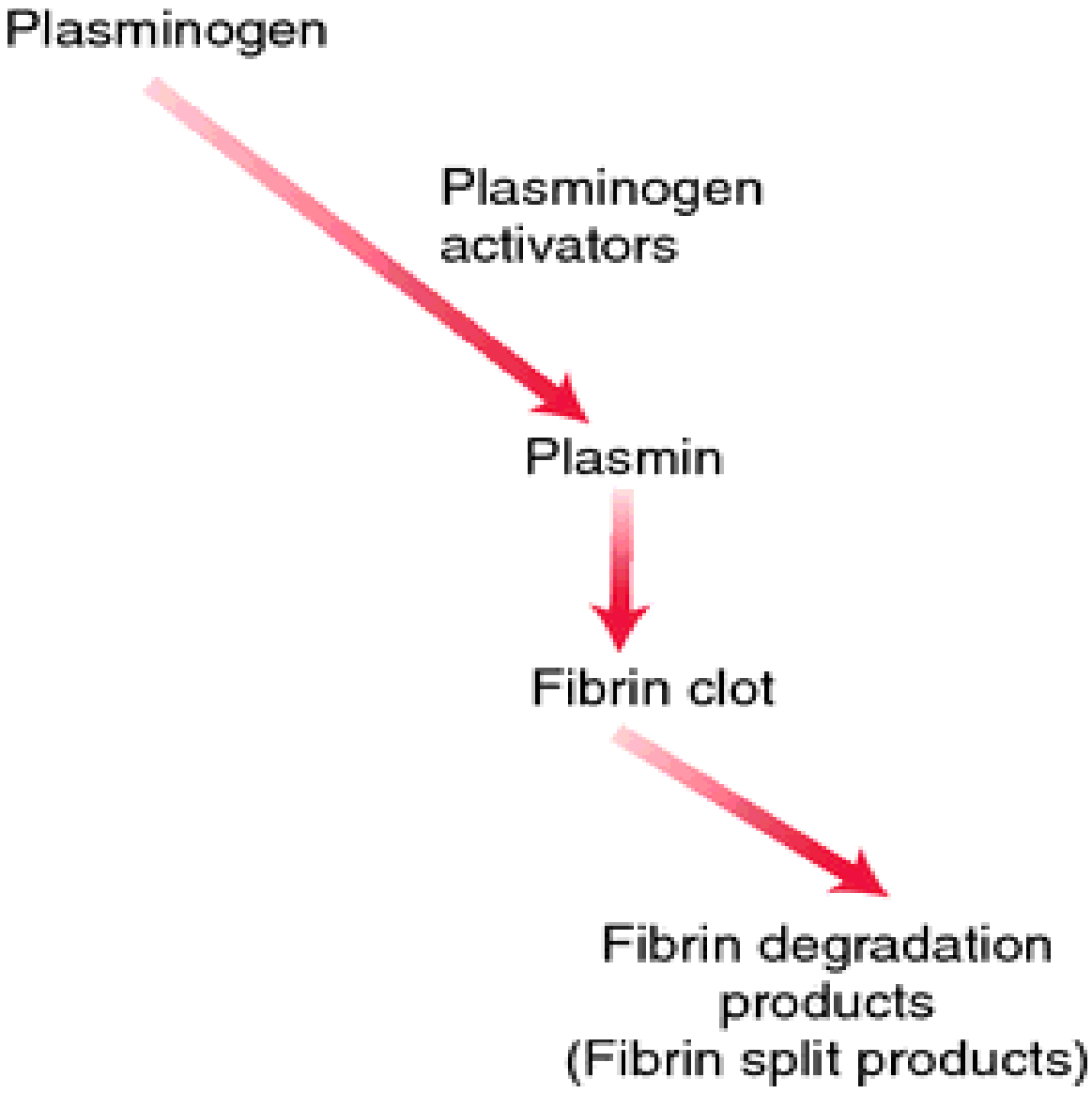

Figure (2.2) Thrombolytic Therapy (Ckal, 2021)

2.8. Contraindications/ Risk Factors Thrombolytic Therapy:

2.8.1. Absolute Contraindications for Thrombolytic Therapy

- Recent intracranial hemorrhage (ICH)
- Structural cerebral vascular lesion
- Intracranial neoplasm
- Ischemic stroke within three months
- Possible aortic dissection
- Active bleeding or bleeding diathesis (excluding menses)
- Significant head injury or facial trauma within three months
- Recent Intracranial or spinal surgery
- Severe uncontrolled hypertension
- For streptokinase, previous treatment within six months

2.8.2. Relative Contraindications for Thrombolytic Therapy

- History of severe and poorly controlled hypertension
- Severe hypertension at presentation (systolic blood pressure >180 mmHg or diastolic blood pressure >110mmHg)
- Prolonged (>10 minutes) cardiopulmonary resuscitation (CPR) or major surgery within three weeks.
- History of ischemic stroke.
- Dementia
- Internal bleeding within 2 to 4 weeks
- Noncompressible vascular punctures
- Pregnancy
- Active peptic ulcer
- Current therapy of anticoagulant associated with an elevated international normalized ratio (INR) higher than 1.7 or a prothrombin time (PT) longer than 15 seconds (Fugate & Rabinstein, 2015).

2.9 Type of Thrombolytic Therapy

2.9.1. Streptokinase

First thrombolytic agent was imparted to the market to remedy acute MI. Streptokinase can dissolve more than 50% of a clot in 5 to 10 minutes, research found that. Reduced death-rate compared with standard curing when using streptokinase by trial with more than 30,000 patients (Shabbir & Ahmad, 2017).

It is the exceedingly utilized thrombolytic therapy towards the world, because of its depressed cost with safety and sensible activity. The hazard of intracranial hemorrhage is lower, because it has a large content of antigens and the linked large titer of anti-streptococcal antibody, within six months give back of streptokinase is not believed safe. It shapes a complex that transforms extra plasminogen to active plasmin after link with free circulating plasminogen. Last possibility careful to this medication is dose a certified hypotension; it often exerts fever response and allergic reactions because it generated of streptococcus (Capitanescu et al., 2016).

2.9.2. Alteplase

A thrombolytic therapy that is produced by recombinant DNA technology, is the natural, the human plasminogen activator the therapy of acute MI. It is utilized in synchronism with heparin and aspirin as well as therapy block catheters, acute ischemic stroke, and pulmonary embolism (Jala & Brien, 2019; Mosimah et al., 2019).

It must be dynamic on the surface of a fibrin clot. It is rarely correlating with any allergic appearance and is not an antigen. It has been noticed with a moderate hazard of hemorrhage, an essential quantitative of circulating fibrin degeneration result, systemic breakdown of the fibrin in blood clots (Dillon et al., 2019).

2.9.3. Tenecteplase

Thrombolytic therapy is generally used in the region of Canada and the United States with the exception of ischemic stroke and more European countries. It is the final process of removing specificity through liver metabolism, contains especially greater fibrin content and extends the plasma half-life. It is higher convenient to manage and reduces antigenicity. Work is considered as a minimal risk of non-cerebral hemorrhage and maximizing productivity with minimal wasted effort (Zitek et al., 2020).

2.9.4. Reteplase

It is recombinant plasminogen activator of a second generation. It is one of type the thrombolytic therapy administer to address acute MI. Reducing the tendency to hemorrhage from the first-generation factor, and that faster of them (Zhaoet al., 2017).

It gives greater release spread through the thrombus than holding only to the outside part as tissue plasminogen activator does, is lower linking with fibrin than native tissue plasminogen activator does. These properties prove to be faster at dissolving clots than other agents. Give plasminogen to convert into thrombus dissolving plasmin, it does not display competitive suppression of plasminogen (Mohammadi et al., 2020).

2.9.5. Urokinase

It has been used many times for peripheral vascular thrombosis and catheters, else commercially obtainable recombinant. It immediately fissure plasminogen to plasmin, in contrast to streptokinase. It is often result through renal parenchyma that is believed to be a physiologic thrombolytic therapy and thus filtered from human urine; it is a depressed antigenicity that gives frequent doses without antigenic issues (Cao et al., 2020).

2.9.6. Prourokinase

It is comparatively ineffective and requires transformation to urokinase to initiate a predisposition to initiation. It is a novel factor that has

previously been in clinical trials. A requirement for such transference supplies it with special physiological fibrin characteristics (Gurewich et al., 2006).

2.9.7. Anistreplase

It is not controlled for plasminogen to be diffuse, also succeeded in producing a complex mixture of streptokinase and plasminogen. It spends great antigenicity, in spite of it is numerous theoretical advantage of streptokinase. It is the case for the systematic analysis of plasminogen binding fibrin after production; it does not differentiate between circulating identical with streptokinase (Baig & Bodle, 2020).

2.10. Mechanism of Action

Thrombosis is the complete interactive reply coagulation factors, platelet, vascular and reactive response. By stimulate platelets, diffuse prothrombin is transformed to its active thrombin through thrombosis, active thrombin changes the fibrinogen to fibrin, by plasminin acquired from plasminogen this process is balanced. Tissue plasminogen activator (tPA) is present in endothelial cells and is a normal state of thrombolytic therapy; It display affinity and speciality in fibrin. The termination target of treatment is to eliminate thrombus at the site of clot and on the superficies of fibrin through the bound of tPA to plasminogen and transform plasminogen to plasmin. Partition linking can assist the changing to two characteristics as follows:

2.13.1. Fibrin specific agents= mostly need the presence of fibrin for the conversion, but on a minimal scale can do so in the absence of fibrin too. For examples, alteplase (tPA), reteplase (recombinant plasminogen activator [r-PA]), and tenecteplase.

2.13.2. Non-fibrin specific agents= do not need fibrin presence for conversion that's why they can do this systematically such as streptokinase (Chapin & Hajjar, 2015).

2.11. Administration to Acute Pulmonary Embolism and other

Thrombolytic therapy can be administered in two forms, topical freeing via catheter after movement to the location of the thrombus and systemic given during a peripheral vein. Plasminogen split to the efficient plasmin by serine proteases in the treatment of thrombolytic. Typically, thrombolytic therapy is referred to as plasminogen activator (Capitanescu et al., 2016).

When a PCI cannot be found, and as a far traveler to the institution providing medical and surgical treatment, thrombolytic therapy remains essential to treat acute PE in many cases. If you administer thrombolytic therapy after acute myocardial infarction for a long time, its ability to produce the desired is less. It is infused by qualified specialist nurses even before the patient arrives at the hospital setting, can be obtained over a wide area and is confirmed in the treatment of acute PE. Door to needle time is a beneficial method to measure the time, must be preserved beneath 30 minutes to obtain the most outcome (Bendary et al., 2017).

Thrombolytic therapy is administrated in acute ischemic stroke to solution the thrombus in the blood in acute ischemic stroke which inhibiting the blood move to the brain with a wish to return the blood flow into the regions of the brain are not yet cell dead yet. Administered alteplase into a vein is the important to breakdown clots in acute ischemic stroke when given during four to five hours of starting the stroke that improves the outcome of functional. while acute ischemic stroke results from intracranial vascular blocking, mechanical removal is advantageous. Intravenous alteplase should be given therapy for all patients with witch existing during a four to five hour period from their last familiar time and without the absolute contraindication to treatment (Dillon et al., 2019).

Primary treatment of option thrombolytic therapy to limb an inadequate blood supply non- life dangerous from clots of little than 14 days

of period. Local breakdown of the fibrin in blood clots takes (6-72) hours to realize clot solution, and not appropriate to patients with ischemia limb-threatening following agents are use in acute pulmonary embolism (PE) streptokinase, urokinase, alteplase, and tenecteplase is presently under study. Evade clinicians simultaneous administration of unfractionated heparin (UFH) in the acute PE, and it had given only in onset for protection of frequent clotting following thrombolytic therapy, and during the done partial thromboplastin time (aPTT) has descend for a value reduce than two the normal value periods (Olinic et al., 2019; Theodoridis et al., 2018).

The primary therapy to deep vein thrombosis (DVT) is the anticoagulation. Patients with confirmed serous acute DVT with minimum hazard to the hemorrhage can succumb catheter- directed to solution the administered into a vein clot. Because the raise hazard of the hemorrhage and reduction of advantage any death-rate, combination treatment with various thrombolytic therapy and glycoprotein inhibitors is not mostly a recommendation. Character of the patient comprise symptoms of minimal than 14 days acute DVT, the upper-extremity DVT of the proximal DVT, and good working condition (Fleck et al., 2017; Vedantham et al., 2016).

2.12. Adverse Effects

Thrombolytic therapy when administered in acute PE has the same hazard. These are involved angioedema, abnormally low blood pressure, sensitivity, hemorrhage, and abnormal rhythm. Streptokinase is the often antigenic; therefore, most much complicated is abnormally low blood pressure and allergic response in most the thrombolytic therapy (Karthikeyan et al., 2011).

Different effects same edema in the lung, obstruction of an artery, clot in the deep vein, bleeding in the intracranial, allergic, nausea, seizure, and stroke. Hemorrhagic complications result from the risk factors involve use of anticoagulants, old age, modern stroke, hemorrhage a tendency,

uncontrolled and abnormally high blood pressure. Sharp bleeding complications appearance when taking an overdose in a non-body-weight adjusted style. The high recurrent complication of treatment in the thrombolytic is the hemorrhage (Logallo et al., 2017; Rosenberg & Steiner, 2016).

2.13. Nursing Intervention for Thrombolytic Therapy

1- Monitor the patient's blood pressure continuously

2- Full major or secondary hemorrhage examination

3- Neurological assessment of the patient

4- The manifestations of ICH are noted

5- Observation marker orolingual angioedema

6- Discontinue the thrombolytic therapy infusion and immediately initiate supportive therapy with antihistamines and corticosteroids if appearance in the patient hypersensitivity response

7- If the patient suffers from of severe and high blood pressure, severe headache, has a bad neurologic examination, and abdominal discomfort, command to faster CT scan and stopping thrombolytic administration

8- Before starting anticoagulant or anti-platelet therapy, a continuous CT or MRI scan should be performed for at least one day

9-Allergic reactions and angioedema in the mouth, are continued to be monitored (Cheng et al., 2018; Atsumi et al., 2015).

2.14. Enhancing Healthcare Team Outcomes

Nurses should be completely aware of the risk factors for thrombolytic drugs although; this is not a lengthy inquiry regarding the success of treatment for acute MI. Given over a confirmed period of time, it is not just the action that the thrombolytic agents require to be effective. The nurse must also include that the patient has no risk factors for thrombolytic therapy (Benoit et al., 2018).

Aminocaproic acid is helpful in the thrombolytic treatment reflex for its own action. Depending on present disease in patient, fresh frozen plasma (FFP) and cryoprecipitate, ability assist the modern clotting agent and fibrin (Blaine et al., 2016).

It prevents real physiologic thrombolytic action, minocaproic acid should not be administer except if life-threatening bleeding. Possible exacerbate of the therapy, heparin-induced thrombocytopenia and disseminated intravascular coagulation (DIC). It converts immediate diffuse clots with possibility more than location end-organ harm (Golembiewski, 2015).

The nurse must teach the patient on the method about persistent over a period of time observe for hemorrhage and about stay at bed rest for numerous hours after method. Dangerous complications of treatment are stopped by many specialist nurses only by continual attention and close contact. The nurse should know about modern anticoagulants and any potential effect on thrombolytic therapy (Kepplinger et al., 2016).

Several clinical experiments were conducted on patients with acute MI to find out the efficacy of thrombolytic treatment. Decrease hospital duration, cost suitable and protect much life through thrombolytic therapy. The biggest obstacle to thrombolytic therapy is patient delays in detection and late coming to the emergency room, and results are fair to perfect when applied to acute MI (Aoki et al., 2018; Man et al., 2018).

2.15. Previous Studies

❖ **The First Study**

Hami (2020) conducted a quasi- experimental study to limit effectiveness of an educational Program on knowledge of the nurses regarding nursing management of thrombolytic therapy for patients with acute MI at teaching hospitals and cardiac care centers in Baghdad city. This study was conducted on the sample (40) nurses was randomly chosen of

cardiac care units. The findings of this study illustrate there was a highly significant differences between the pre and post-test in the study group, there is a minor difference between the pre and post-test in the control group, concerning the knowledge of the nurses about the nursing management for thrombolytic therapy for acute mi patients. The researcher was concluded that knowledge of the nurses about nursing management to thrombolytic therapy for acute MI patients was improving in the study group after implementing of the educational program, and proven the effectiveness of the program to improving knowledge of the nurses, also the study concluded that a significant association between socio-demographic variable and their knowledge of the nurses in term of level of education and years of experience in CCU.

❖ **The Second Study**

Hammad et al. (2020) conducted study to evaluate incidence of hemorrhagic complications among patients treated with thrombolytic in Erbil city, Iraq. this prospective study was conducted in the intensive care units of roj-halat emergency hospital and rizgary teaching hospital in Erbil city, Iraq. A convenient sample of 100 patients was selected. The result of this study bleeding complication represented 10% of patients treated with recombinant tissue-type plasminogen activator (50% for each major and minor bleeding). Smoking was significantly associated with a bleeding complication of recombinant tissue-type plasminogen activator. The researcher concluded that the incidence of bleeding among patients after treatment with recombinant tissue type plasminogen activator in the intensive care unit was acceptable. The age, diabetes, smoking, and hypertension were risk factors for increasing the bleeding complications in subjects treated with recombinant tissue-type plasminogen.

❖ **The Third Study**

Toppo et al. (2019) conducted this cross sectional study, the effectiveness of teaching program concerning thrombolytic drug therapy in the terms of the knowledge and the practice of staff nurses. The size of the sampling for the study was 30 nurses employing in the critical care units, and purposive sampling methods was utilized to choosing the sample of these study. The results of these study were illustrated the size of the sampling of the nurses were 30 with 93.3% of the females, the nurses who had 2-6 years of the experience were 53.3% and the administered thrombolytic treatment in past were 70% The knowledge mean score at the pre-test was 25.8% while at the post test was 38.33%. That researcher concluded that the nurses' participation after the teaching and the training program was an important improvement in the knowledge and the practice of thrombolytic therapy.

❖ **The Forth Study**

Shaaban Khalil et al. (2018) conducted a study on thrombolytic therapy in acute myocardial infarction, coronary care nurses' knowledge and practice. this study was conducted on sampling of the study of 30 nurses who coronary care at the university of hospital in the upper Egypt were recruited. The results of this study had demonstrated the high percentage of nurses who working in the CCU (86.7%) had Insufficient of the knowledge scores regarding the thrombolytic therapy. Also, most of the study sample (90%) were illustrated Insufficient of the practices concerning administration of the thrombolytic therapy to the patients.

❖ **The Fifth Study**

Naseer and Hassan (2015) conducted a quasi-experimental study to evaluate the effectiveness of nursing education program on the knowledge of the nurses about cardiac rehabilitation phase one to patients with heart attack at the Imamein kadhimein the medical city and Baghdad hospital in the Baghdad city. This study conducted on sampling size was 60 nurses from

the coronary care unit through random sample. The results of the study indicate the effectiveness of educational program concerning the knowledge of the nurses about cardiac rehabilitation stage one for patients with acute MI. The research was concluded through this study that the nurses who were employed in the coronary care unit having the less level of information about the cardiac rehabilitation stage one for patients who have the cardiac attack.

Chapter Three

Methodology

Chapter Three

Methodology

This chapter describes the methodology used in this work, it includes the study design; administrative arrangements and ethical considerations; the setting of the study; the sampling of the study; steps of the study; the validity of the questionnaire; conducting a pilot study; reliability of the questionnaire; steps of data collection; and statistical data analysis

3.1. The Study Design

A quantitative descriptive study design has been carried out. The period of the study started from (1th of November, 2022) to (1th of March, 2023).

3.2. Administrative Arrangements

The official permissions were obtained from Al-Diwaniyah Teaching Hospital in order to ensure the agreement and cooperation (Appendix A).

3.3. The Setting of the Study:

The study had been done in Al-Diwaniyah Teaching Hospital at the Cardiac Care Unit (CCU). The researcher had chosen this hospital because this hospital is the only teaching hospital that contains CCU in Al-Diwaniyah city.

3.4. Sampling of the Study

A non- probability (purposive) sample was selected to obtain representative and accurate data. From (47) nurses working at CCU in Al-Diwaniyah Teaching Hospital, (5) nurses were excluded from the study (five nurses for the pilot study, tow nurse previously participated in thrombolytic therapy courses). So, the total number of nurses participating in the study was (40) nurses.

3.4.1. Inclusion Criteria:

All nurses who are working in CCU who did not participate in thrombolytic therapy courses.

3.5. Steps of the Study

3.5.1. Instrument Form

The researcher has constructed the instrument in order to achieve the objectives of the study, and it consists of two parts (Appendix E), includes the following:

3.5.1.1. Part I: Demographic Data Form:

This part is concerned with the collection of demographic data obtained from the nurses and consists of (six) items including age, gender, educational level, years of experience in nursing, years of experience in CCU, educational/ training courses related PE and thrombolytic therapy.

3.5.1.2. Part II: Knowledge about thrombolytic therapy and PE Form:

This part was constructed to evaluate nurses' knowledge about PE and thrombolytic therapy in CCU. It consisted of (20) multiple-choice questions.

This knowledge test covered the relevant points about the major content research problem. For the purpose of this study, the number of correct answers was used to measure the level of knowledge for each nurse, the rating score of answers was (2) for the correct and (1) for incorrect. This knowledge test took about (20-30) minutes to complete.

3.6. Validity of the Questionnaire

Face validity was determined by evaluation of the multiple-choice questions through a panel of (13) experts (Appendix C), who had more than 10 years of professional experience in their fields, to investigate the content of the multiple-choice questions about PE and thrombolytic therapy. These experts are (9) from faculty members of the Nursing College/ University of Al-Qadisiyah and (4) expert from Al-Diwaniyah Health Department/ Al-

Diwaniyah Teaching Hospital. Those experts were provided with a copy of the study instrument (multiple choice questions of the study) and were asked to review and evaluate the instruments for its content clarity and adequacy. Changes and modifications were made with respect to the experts' suggestions and recommendations. Some items were excluded, and others were added after taking all the comments and recommendations into consideration.

3.7. Pilot study

To determine the reliability of the study instrument, a pilot study was conducted on (five) nurses who are working in CCU during the morning shift randomly. The pilot study sample excluded from the original sample of the study because the CCU cannot be emptied from its staff due to the seriousness of this unit and the critical nature of patients that require continuous follow-up. The pilot study was conducted during the period from 4th to 18th December 2022. The five nurse participants exposed to test and retest.

3.7.1. The Purpose of the Pilot Study

The purposes of the pilot study are**:**

1. To find out the reliability of the study instrument.

2. To determine the time required to fill the multiple-choice questions.

3. To find out whether the contents of the questionnaire are clear and understandable by the participants of the study.

3.8. Reliability of the Questionnaire

The reliability of the questionnaire was determined through a test and re-tests approach obtained through evaluating (five) nurses who are working at CCU in Al-Diwaniya Teaching Hospital, and the interval period was two weeks to determine the reliability of the study instrument. The result of the reliability shows that the person correlation coefficient is ($r = 0.86$) which is considered statistically acceptable matching with the lower bound

of the reliability coefficient (Barton & Peat, 2014). This means that the results are collected from the pilot study show that the questions were clear and understandable and the time to complete the questionnaire were (20-30) minutes.

Table 3.1. Study Questionnaire Reliability:

Reliability Examination Techniques	Accepted Value	Actual Value **r** =	Assessment
Stability (Test-Retest)	0.70	0.86	Pass

Table (3.1) shows that there is a high degree of reliability (0.86) which means that the study instrument is reliable in measuring the study phenomenon at any time in the future.

3.9. Data Collection

The data collection started from 21th December 2022 to 4th January 2023. Data were collection by the interview technique with each nurse were through questionnaire at CCU in Al-Diwaniyah Teaching Hospital.

3.10. Statistical Data Analysis

The data were analyzed using Statistical Package for Social Sciences (SPSS) version 25 application of statistical analysis system. The following statistical data analysis approaches were used for analyzing and evaluating the results of the study:

3.10.1. Descriptive Data Analysis:

a- Tables (Frequencies, Percentages, and Mean of scores).

b- Statistical figure (Bar Charts).

c- Pearson's Correlation Coefficients to determine the reliability of the study instrument.

$$(r) = \frac{n\sum XY - (\sum X)(\sum Y)}{\sqrt{([n\sum X^2 - (\sum X))^2][n\sum Y^2 - (\sum Y))^2]}}$$

r= correlation coefficient of the variables x & y.

n= number of cases.

x= individual's score of variable X.

y= individual's score of variable Y.

∑= summation of.

3.10.2. Inferential Data Analysis:

a- Analysis of variance (chi square) to determine the association between the nurses' knowledge and some demographic characteristics.

Chapter Four

Results

Chapter Four

Results of the Study

The chapter deals with analyzing data after collecting, being processed, tabulated and managing it statistically, then the scientific and logical interpretation of the results related to the objectives of the study.

Table (4.1) Study Sample Demographic Data

Demographic Data	Rating and Intervals	Frequency	Percent
Age / years	20-25	27	67.5
	26-30	11	27.5
	31-35	2	5.0
	Total	40	100.0
Gender	Male	18	45.0
	Female	22	55.0
	Total	40	100.0
Educational Level	Secondary School of Nursing	5	12.5
	Diploma in Nursing	20	50.0
	Bachelor in Nursing	15	37.5
	Total	40	100.0
Years of Experience in Nursing	1-5	38	95.0
	6-10	1	2.5
	11-15	1	2.5
	Total	40	100.0
Years of Experience in (cardiac care unit)	1-5	39	97.5
	6-10	1	2.5
	11-15	0	0
	Total	40	100.0
Participate in education courses related thrombotic therapy	No	100	100.0
	Yes	0	00.0
	Total	40	100.0

Table (4.1) shows study's sample demographic data. The study's results display the dominant age group of nurses were (67.5%) at age group

(20-25) years old. Concerning gender, the table indicates that (55.0%) of nurses were female. Regarding to levels of education, the table's results display the majority of nurses (50.0%) were diploma in nursing. In regards to years of experience in nursing (95.0%) of nurses have (1-5) years. Concerning years of experience in cardiac care unit (97.5%) of nurses have (1-5) years. Additionally, the study' results showed that (100.0%) of the sample on have educational courses about thermotic therapy.

Table (4.2): Summary Statistics of the Study Samples' Responses

Items	Responses	Frequency	Percent
1. A pulmonary embolism (pulmonary clot) is defined as:	Incorrect	9	22.5
	Correct	31	77.5
	Total	40	100.0
2. Causes of pulmonary embolism:	Incorrect	29	72. 5
	Correct	11	27.5
	Total	40	100.0
3. Risk factors for pulmonary embolism are all options except:	Incorrect	30	75.0
	Correct	10	25.0
	Total	40	100.0
4. of the most common symptoms of pulmonary embolism are:	Incorrect	20	50.0
	Correct	20	50.0
	Total	40	100.0
4. Pulmonary embolism is diagnosed by:	Incorrect	18	45.0
	Correct	22	55.0
	Total	40	100.0
5. Which of the following should be taken during surgery to PE:	Incorrect	21	52.5
	Correct	19	47.5
	Total	40	100.0
6. Which of the following should be taken after surgery to prevent PE:	Incorrect	27	67.5
	Correct	13	32.5
	Total	40	100.0
7. Medical compression stockings are used to prevent pulmonary embolism for:	Incorrect	25	62.5
	Correct	15	37.5
	Total	40	100.0
8. Medications given to the patient to prevent pulmonary embolism:	Incorrect	12	30.0
	Correct	28	70.0
	Total	40	100.0

9. Before giving anticoagulants, one must:	Incorrect	29	72.5
	Correct	11	27.5
	Total	40	100.0
10. of the drugs that should be avoided during treatment with anticoagulants (coagulants):	Incorrect	0	0.0
	Correct	40	100.0
	Total	40	100.0
11. Complications of pulmonary embolism:	Incorrect	20	50.0
	Correct	20	50.0
	Total	40	100.0
12. When anticoagulant therapy is given, a pulmonary embolism patient will suddenly complain	Incorrect	23	57.5
	Correct	17	42.5
	Total	40	100.0
13. Streptokinase is a bacterial protein produced by:	Incorrect	29	72.5
	Correct	11	27. 5
	Total	40	100.0
14. Which of the following is a human enzyme secreted by the kidneys that is a direct:	Incorrect	29	72.5
	Correct	11	27.5
	Total	40	100.0
15. What is the primary consideration when preparing to administer anticoagulant:	Incorrect	29	72.5
	Correct	11	27.5
	Total	40	100.0
16. Frequent general complications in a patient with pulmonary embolism as a result of:	Incorrect	13	32.5
	Correct	27	67.5
	Total	40	100.0
17. Demographic characteristics that are risk factors for bleeding after anticoagulant:	Incorrect	25	62.5
	Correct	15	37.5
	Total	40	100.0
18. Relative contraindications for patients with PE to anticoagulant therapy:	Incorrect	32	80.0
	Correct	8	20.0
	Total	40	100.0
19. Which of the following is an absolute contraindication for pulmonary embolism patients:	Incorrect	24	60.0
	Correct	16	40.0
	Total	40	100.0

Table (4.3): Summary Statistics of the Study Samples' Responses Mean Scoring

Question	N	Mean	Std. Deviation	Assessment
1. A pulmonary embolism is:	40	1.77	.423	Good
2. Causes of pulmonary embolism:	40	1.28	.452	Low
3. Risk factors for P E are all:	40	1.25	.439	Low
4. of the most common symptoms:	40	1.50	.506	Fair
5. Pulmonary embolism is:	40	1.55	.504	Good
6. Which of the following should:	40	1.48	.506	Low
7. Which of the following should be:	40	1.33	.474	Low
8. Medical compression stockings:	40	1.38	.490	Low
9. Medications given to the patient:	40	1.70	.464	Good
10. Before giving anticoagulants:	40	1.27	.452	Low
11. of the drugs that should be:	40	2.00	.000	Good
12. Complications of PE:	40	1.50	.506	Fair
13. When anticoagulant therapy:	40	1.43	.501	Low
14. Streptokinase is a bacterial:	40	1.28	.452	Low
15. Which of the following is:	40	1.27	.452	Low
16. What is the primary:	40	1.28	.452	Low
17. Frequent general complication:	40	1.67	.474	Good
18. Demographic characteristics:	40	1.38	.490	Low
19. Relative contraindications for:	40	1.20	.405	Low
20. Which of the following is:	40	1.40	.496	Low

Table (4.4) Distribution Overall Assessment of Knowledge among Nurses.

Level of Nurses' Knowledge	Frequency	Percent	Mean	Std. Deviation	Assessment
Low	9	22.5	1.44	.162	fair
Fair	27	67.5			
Good	4	10.0			
Total	40	100.0			

Good (mean 1.68-2), fair (mean 1.34-1.67), low (mean 1-1.33)

Table 3 shows the mean of level of nurses' knowledge was (1.44), the majority of the study sample (67.5%) a fair level of nurses' knowledge.

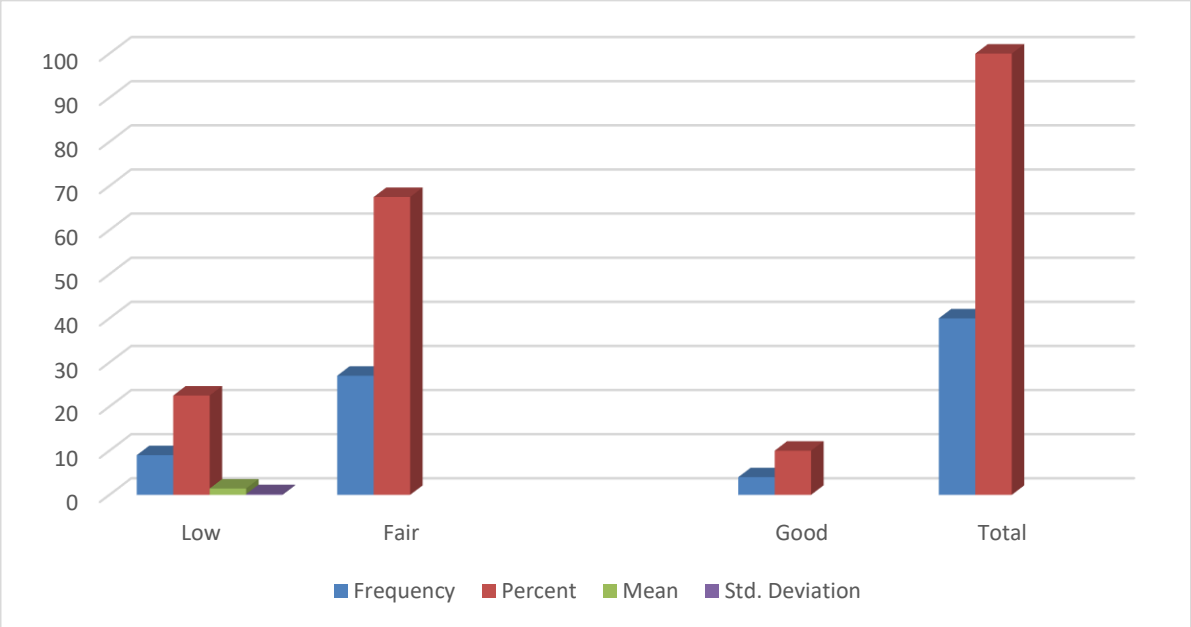

Figure (4.1) Distribution Overall Assessment of Knowledge among Nurses.

Table (4.5) Association between the Overall Assessment of Nurses' Knowledge and Their Demographic Data

Demographic Data	Chi-Square Value	D.F.	P-Value	Sig
Age/Years	5.034	4	.284	NS
Gender	2.439	2	.295	NS
Education Levels	3.611	4	.461	NS
Years Of Experience In Nursing	1.014	4	.908	NS
Years Of Experience In Ccu	6.021	4	.040	HS
TC	1.333	2	.513	NS

The results of the table (4.5) show that there is no association between the overall nurses' knowledge with their demographic data at p-value more than (0.05). Except (years of experience In Ccu) show that there is association at p-value (0.04).

Chapter Five

Discussion

Chapter Five
Discussion of the Study Findings

This chapter describes that the discussion and interpretation, as a result of the study concerning it is objectives supported by the literature and relevant previous studies available**.**

Part-I: Discussion of the Nurses' Demographic Characteristics of the Study Sample, as Offer in Table (4.1):

1.Age groups

Regarding the age of nurses, the results of the study revealed that the mor than two third of participants (67.5%) were between (20-25) years old, respectively. These findings of the current study were similar by a study conducted by Abdulrdha and Mansour (2018) that was displayed about (36.20%) of the nurses were in the age group (20-24) years old.

2.Gender

The results explained that the percentages of the nurses' participants in the study's sample were more than half female (55. %) while the male (45.0%). This finding from the current study agreed with a study conducted by Toppo et al., (2019) which showed that the majority of the study sample were females (93.0%).

3.Educational level

With regard to educational levels, the findings of the study showed that less than one quarter of the study sample graduated from high school nursing (12.5%), followed by those halves of the study sample graduated from a diploma in nursing (50.0%), and more than one third those who graduated from the nursing college (37.5%).

This result is confirmed by (Dillon et al., 2019) they found that those halves of the study (50%) of participants were graduated from diploma in nursing.

4.Years of Experience in Nursing

According to years of experience in nursing field, the results illustrated that majority study's sample were (85.0%) had less than 5 years of experience in nursing. These results of the study conducted by Ahmed et al., (2019) who reported that most the sample of study had less than 5 years of experience in nursing, and supported findings of current study.

5.Years of Experience in CCU

Regarding years of experience in CCU, the most of participants in the study found (95.0%) were ranging in their years of experience less than 5 years. The results were found in a study conducted by Fashakh & Kadhem (2016) which clarified that most nurses (62 %) had experience less than (5) years this will support results of the current study.

6. Educational Courses elated to Thrombolytic Therapy

The study' results showed that all the sample (100.0%) were not having courses about thrombotic therapy. The results were found in a study conducted by Ahmed and ckal, (2021) similar for this study were found all the sample (100.0%) were not having courses about thrombotic therapy.

Part-II: Discussion of the Overall Assessment of Nurses' Knowledge about Risk factors for bleeding in patient's acute pulmonary embolism with thrombolytic therapy, as Offer in Tables (4.4):

The result showed that the responses of the more than two third of nurses were a fair at percentage (67.5%) and mean scoring (1.44) of nurses' knowledge about risk factors for bleeding in patient with PE.

This findings from the current study were agreed with a study conducted by Shaaban Khali et al., (2018) found the majority of nurses (86.7%) had unsatisfactory knowledge scores at university hospital in Upper Egypt.

The results of study were also partly in line with a similar study by Ndosi and Newell (2009), who studied knowledge of the nurses of

pharmacology of drugs they generally administered and display most of them had inadequate knowledge.

Depending on these results, nurses' knowledge can be raised and enhanced by concluding that the educational program, can be continuous use for all nurses. It can also be applied to improve nurses' knowledge as a research process to solve a real problem occurring in any health condition and to giving the best quality of care for patients. The results may encourage all concerned to embrace more similar goals in their curricula (The researcher).

Part-III: Discussion the Association between the Overall Assessment of the Nurses' Knowledge and their Demographic Data Table (4-5):

Regarding to association between nurses' knowledge and their age, this study demonstrated that there no significant association between nurses' knowledge and their age with p-value (0.284).

The results of the study, which are consistent with the study done by Al-Tameemi and Khudur (2017) showed that there were no significant association between the age of the nurses and their knowledge at a p-value of (0.888).

Concerning to the association between the nurses 'knowledge and their gender, there is no significant association between the knowledge of nurses and their gender with p-value (0.295). These results were supported by a study carried out in Baghdad by Nasir and Hassan (2015) in which no significant association were found between study participants with their gender at p-value (0.731).

With regard to the association between educational level and knowledge of the nurses, the study results found no significant association between the educational level and the knowledge of nurses with p-value (0.461). (Saied & Mansour, 2021).

Regarding to the association between nurses' knowledge and years of experience in nursing, the results of study that found no significant association between the knowledge of nurses and their years of experience in nursing with p-value (0.908).

The current study conducted by Hami (2020), found there is no significant association between knowledge of nurses and their years of experience in nursing with p-value (0.820).

According to the years of experience in CCU and the knowledge of nurses, the results of study indicated that there was significant association between years of experience in CCU and nurses' knowledge at p-value (0.040).

These results are consistence with the study conducted by (Skal & Ahmed, 2021), that found there is significant statistical association between knowledge of nurses and their years of experience in CCU at p-value (0.010).

Chapter Six

Conclusions and Recommendations

Chapter Six

Conclusions and Recommendations

6.1. Conclusions:

Depending on the results of the present study and discussion, the study concluded the following:

6.1.1. The study showed that the majority of nurses who agreed to participate in the study were female, (20 to 25) years of age, graduated from the diploma in nursing, (1 to 5) years of experience in nursing and CCU, and all nurses participate have no educational courses about thrombotic therapy.

6.1.2. The researcher concludes that the majority of the study samples were fair level of nurses' knowledge concerning thrombolytic therapy. This conclusion is illustrated by the statistical methods.

6.1.3. This study illustrated there no significant association between overall the knowledge of the nurses and their demographic data (age, gender, level of education, years of experience in nursing and CCU, participation in educational courses related to thrombotic therapy, except item (years of experience in CCU) there is association at p-value (0.04)

6.2. Recommendations:

Depending on the results and conclusions of the present study, the researcher recommends the following:

6.2.1. The Ministry of Health should find encouraging ways to enable nurses to engage in it, such as seminars and symposiums, to develop their knowledge and keep them up to date on thrombolytic therapy, and change old information that proved to be wrong with every updated information.

6.2.2. Activating the Training and Development Center for action educational courses about thrombolytic therapy in the hospital, especially nurses working in CCU.

6.2.3. The educational lectures should be regularly done and updated not only for nurses working in CCU about thrombolytic therapy.

6.2.4. Applications training course about administration thrombolytic therapy for all staff nursing in CCU.

6.2.5. There is a need across Iraqi hospitals to perform similar studies at a larger sample size and sufficient period of time.

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Appendices

Republic of Iraq
Ministry Of Higher Education
&Scientific Research
University of Al-Qadisiya
College of Nursing

وزارة التعليم العالي والبحث العلمي
جامعة القادسية
كلية التمريض
شعبة التسجيل

Ref.
Date :

العدد : ٥٧٧
التاريخ : ٢٨/ ١١ / 2022

جامعة القادسية
كلية التمريض
الصادر

الى / مستشفى الديوانية التعليمي

م / تسهيل مهمة

تحية طيبة ...

يرجى تسهيل مهمة البحث للطلبة المدرجة اسماؤهم ادناه في مستشفاكم وباشراف (م.م. بهاء مرزة صخيل) مع التقدير والاحترام .

ت	اسم الطالب	المرحلة
١	نرجس عبد الرضا باقر	الرابعة
٢	شهد حاتم عطية	الرابعة
٣	دعاء قاسم عبيد	الرابعة
٤	سمر قاسم عيدان	الرابعة
٥	حوراء هيثم علي	الرابعة

ا. م.د حيدر امير جبر
معاون العميد للشؤون العلمية
٢٨/ ١١/ ٢٠٢٢

نسخه منه الى/

****

- مكتب السيد العميد/ للتفضل بالاطلاع... مع الاحترام
- مكتب السيد معاون العميد للشؤون العلمية / للتفضل بالاطلاع...مع الاحترام
- شعبة التسجيل . مع الاوليات
- الصادر

صفحة موافقة المبحوث

عزيزي الممرض / عزيزتي الممرضة

بين ايديكم استبانة لدراسة:

تقييم معارف الممرضين بعوامل الخطر النزيف لدى مرضى الانصمام الرئوي الحاد الذين يتلقون العلاج المميع للتخثر في وحدة العناية القلبية في مستشفى الديوانية التعليمي

Assessment of Nurses' knowledge about Risk Factors for Bleeding in Patients Acute Pulmonary Embolism Receiving Thrombolytic Therapy at Cardiac Care Unit in Al-Diwaniyah Teaching Hospital

لذا يرجى تفضلكم بملء المعلومات المتعلقة بالبحث اعلاه، وأود إعلام حضراتكم بأن المعلومات التي ستدلون بها ستكون في غاية السرية، وفقط لأغراض البحث العلمي خدمة للصالح العام.

توافق بالمشاركة

نعم ☐ **لا** ☐

أسماء الباحثين

نرجس عبد الرضا باقر

شهد حاتم عطية

سمر قاسم عيدان

حوراء هيثم علي

دعاء قاسم عابد

بكالوريوس علوم في التمريض / كلية التمريض / جامعة القادسية

خبراء تحكيم البرنامج التعليمي والاستبانة

ت	اسم الخبير	سنوات الخبرة	العنوان الوظيفي	الشهادة	مكان العمل
1	د. محمد جلوب مراد	25	استاذ مساعد دكتور	بورد باطني	جامعة القادسية / كلية التمريض
2	د. عبد الامير ليلو	25	استاذ مساعد دكتور	د. مناعة احياء مجهرية	جامعة القادسية / كلية التمريض
3	د. سجى مهدي جابر	20	استاذ مساعد دكتور	د. احياء مجهرية	جامعة القادسية / كلية التمريض
4	ساجده خميس عبدالله	28	مدرس دكتور	د. تمريض صحة مجتمع	جامعة القادسية / كلية التمريض
5	د. حيدر امير جبر	16	مدرس دكتور	د. تمريض صحة نفسية وعقلية	جامعة القادسية / كلية التمريض
6	د. علاء ابراهيم سعيد	23	مدرس	د. تمريض البالغين	جامعة القادسية / كلية التمريض
7	أ. حيدر عبد الأمير طوير	14	مدرس مساعد	ماجستير تمريض البالغين	جامعة القادسية / كلية التمريض
8	أ. حيدر كاظم ردام	20	مدرس مساعد	تمريض صحة مجتمع	جامعة القادسية / كلية التمريض
9	أ. عقيل عبد الحمزة مرهون	17	مدرس مساعد	تمريض اطفال	جامعة القادسية / كلية التمريض
10	د. علي كاظم عناد	29	استشاري	بورد باطنية	وزارة الصحة والبيئة /دائرة صحة الديوانية/ مستشفى الديوانية التعليمي
11	علي فوزي الزاملي	20	استشاري	بورد باطنية	وزارة الصحة والبيئة /دائرة صحة الديوانية/ مستشفى الديوانية التعليمي
12	د. ضياء غانم النائلي	19	استشاري	بورد باطنية	وزارة الصحة والبيئة /دائرة صحة الديوانية/ مستشفى الديوانية التعليمي
13	د. بهاء عثمان صاحب	13	استشاري	بورد باطنية	وزارة الصحة والبيئة /دائرة صحة الديوانية/ مستشفى الديوانية التعليمي


انكار مخصص لجلوس
الكادر الطبي فقط
لطفا

الجزء الاول / المعلومات الديموغرافية:

1. العمر : ☐

2. الجنس :

2-1. ذكر ☐ 2-2. انثى ☐

3.المستوى التعليمي :

- خريج اعدادية تمريض ☐
- خريج معهد تمريض ☐
- خريج كلية تمريض ☐
- خريج دراسات عليا (ماجستير أو دكتوراه) ☐

4 . سنوات الخدمة في مجال التمريض ☐ **سنة**

5. عدد سنوات الخدمة في وحدة الرعاية القلبية ☐ **سنة**

6- شاركت في دورات تعليمية/ تثقيفية حول العلاج المميع للتخثر؟

نعم ☐ **لا** ☐

اذا كانت الاجابة نعم

داخل العراق ☐ خارج العراق ☐

عدد الدورات ☐ المدة الزمنية ☐

الجزء الثاني / عوامل خطر النزيف لمرضى الانصمام الرئوي الحاد الذين يتلقون العلاج المميع للتخثر:

عزيزي الممرض / الممرضة ..... يرجى اختيار الاجابة الصحيحة من بين الإجابات التالية:

ت	الفقرات	
1	**يعرف الانصمام الرئوي (الخثرة الرئوية) ب:**	
	أ	انسداد بسبب جلطة دموية في الشريان الأبهر
	ب	انسداد بسبب جلطة دموية في الشريان الرئوي
	ج	انسداد بسبب جلطة دموية في الشريان التاجي
	د	انسداد في الأوردة العميقة بسبب تجلط في الأطراف أو الحوض
2	**من اسباب الانصمام الرئوي:**	
	أ	الالتهاب الرئوي
	ب	الحمى الروماتيزمية
	ج	انسداد الاوردة العميقة في الاطراف
	د	الربو
3	**من عوامل الخطورة لحدوث الانصمام الرئوي كل الأختيارات ماعدا:**	
	أ	ضغط الدم
	ب	ركود الدم نتيجة لعدم الحركة لفترة طويلة
	ج	زيادة عوامل التخثر
	د	تخثر الدم في أوردة الساقين
4	**من اكثر الاعراض شيوعا للانصمام الرئوي هو:**	
	أ	ضيق التنفس
	ب	بطء في معدل التنفس وضربات القلب
	ج	صداع
	د	الم بالمعدة
5	**يتم تشخيص الانصمام الرئوي عن طريق:**	
	أ	تحليل صورة الدم الكاملة
	ب	تحليل سرعة ترسيب الدم للمريض
	ج	الدي دايمر للمريض (D – DIMER)
	د	تحليل وظائف الكبد والكلى

6	**اي من الاجراءات التالية يجب تنفيذها اثناء العملية الجراحية للوقاية من حدوث الانصمام الرئوي:**	
	أ	عمل التحاليل المختبرية الكاملة
	ب	توقيع المريض على اجراء العملية
	ج	متابعة نسبة الاوكسجين في الدم والعلامات الحيوية
	د	عمل تمارين التنفس
7	**اي من الاجراءات التالية يجب تنفيذها بعد العملية الجراحية للوقاية من حدوث الانصمام الرئوي:**	
	أ	اعطاء المريض السوائل اللازمة
	ب	الاهتمام بتحريك المريض على الفور بعد العملية
	ج	تغيير القسطرة البولية كل ساعتين
	د	اعطاء المريض مضادات الحساسية
8	**تستخدم الجوارب الطبية الضاغطة للوقاية من الانصمام الرئوي من اجل :**	
	أ	تنشيط الدورة الدموية في الاوردة
	ب	منع حدوث التورم
	ج	الضغط على اوردة الساقين
	د	كل الاختيارات السابقة
9	**الادوية التي تعطى للمريض للوقاية من الانصمام الرئوي:**	
	أ	مضادات التخثر (التجلط)
	ب	مضادات الحساسية
	ج	مضادات الاكتئاب
	د	مضادات الالتهاب
10	**قبل اعطاء مضادات التجلط لابد من :**	
	أ	استخدام الملينات
	ب	استخدام المضادات الحيوية
	ج	استخدام المسكنات
	د	قياس زمن وتركيز البروثرومبين PT ومعرفة نسبة تحليل

11	**من الادوية التي يجب تجنبها اثناء العلاج بمضادات التخثر(التجلط) :**	
	أ	المضادات الحيوية
	ب	مضادات الاكتئاب
	ج	مضادات الصرع
	د	الكورتيكوستيرويدات
12	**من مضاعفات الانصمام الرئوي:**	
	أ	تورم في الساق
	ب	الالتهاب السحائي
	ج	خلل في الاعصاب
	د	تلف الرئة المصابة و الوفاة
13	**عند اعطاء العلاج المميع للخثرة سيشكو مريض الانصمام الرئوي فجأة من صعوبة في التنفس وغثيان, أي مما يلي يجب أن يكون اولويات التداخل التمريضي:**	
	أ	وقف اعطاء العلاج وأخبار الطبيب بذلك
	ب	إعطاء السوائل وتوفير العلاج بالأكسجين
	ج	تناول مضادات الهيستامين ثم متابعة ادارة العلاج
	د	إبطاء ادارة العلاج وإعطاء الأكسجين
14	**الستربتوكيناز هو بروتين بكتيري ينتج عن:**	
	أ	العقديات الانحلالية ألفا
	ب	العقديات الحالة للدم بيتا
	ج	المكورات العنقودية الذهبية
	د	الإشريكية القولونية
15	**أي مما يلي هوإنزيم بشري يفرز من الكلى وهو منشط مباشر للبلازمينوجين:**	
	أ	يوروكيناز
	ب	الستربتوكيناز
	ج	تينيكتيبلاز
	د	أنستريبلاز

16	**ما هو الاعتبار الأساسي عند التحضير لاعطاء العلاج المميع للخثرة لمريض يعاني من الانصمام الرئوي:**	
	أ	تاريخ مرض القلب
	ب	الحساسية تجاه الأسبرين
	ج	حجم وموقع احتشاء عضلة القلب الحاد
	د	الوقت منذ ظهور الأعراض
17	**المضاعفات العامة المتكررة لدى المريض المصاب بالانصمام الرئوي نتيجة تلقي العلاج المميع للخثرة:**	
	أ	النزيف
	ب	تليف الكبد
	ج	التهاب المسالك البولية
	د	متلازمة القولون العصبي
18	**الخصائص الديموغرافية التي تعتبر من عوامل خطر النزيف بعد العلاج المميع للخثرة للمرضى المصابين بالانصمام الرئوي:**	
	أ	ارتفاع ضغط الدم
	ب	ضرر الشريان الأبهري
	ج	التهاب البنكرياس الحاد
	د	تقدم العمر لأكثر من 75 سنة
19	**من موانع الاستعمال النسبية لمرضى الانصمام الرئوي للعلاج المميع للتخثر:**	
	أ	الأورام داخل الجمجمة
	ب	الحمل
	ج	علاج سابق بالستربتوكيناز في غضون ستة أشهر
	د	نزيف داخل الجمجمة حديث
20	**أي مما يلي يعتبر من موانع الاستعمال المطلقة لمرضى الانصمام الرئوي الذين يتلقون العلاج المميع للتخثر:**	
	أ	القرحة المعوية النشطة
	ب	النزيف النشط
	ج	نزيف داخلي خلال 2 إلى 4 أسابيع
	د	تاريخ من ارتفاع ضغط الدم الشديد

المستخلص

الخلفية: عادة ما يتم اعطاء العلاج المميع للتخثر لمرضى الذين يعانون من الانصمام الرئوي الحاد. اثبتت العوامل المميعة للتخثر قد تذوب جلطات الدم بسرعة أكبر من الهيبارين وقد تقلل من معدل الوفيات المرتبط بالانصمام الرئوي. يمكن أن تساعد معرفة عوامل خطر النزيف في تحديد ما إذا كان يجب إعطاء الأدوية المميعة للخثرة للمرضى. عوامل الخطر/ موانع العلاج الحالة للخثرة مطلقة ونسبية.

الاهداف: تقييم معارف الممرضين بعوامل خطر النزيف للعلاج المميع للتخثر لمرضى الذين يعانون من الانصمام الرئوي الحاد بوحدة العناية القلبية في مستشفى الديوانية التعليمي، ومعرفة العلاقة بين معارف الممرضين والبيانات الديمغرافية.

المنهجية: تم تصميم الدراسة الوصفية الكمية في وحدة العناية القلبية بمستشفى الديوانية التعليمي للفترة من (1 نوفمبر 2022) إلى (1 مارس 2023) عينة غير احتمالية (غرضية) مكونة من (40 ممرض\ة) عامل في وحدة العناية القلبية. لقياس معارف الممرضين، استخدم الباحث الأداة التي تتكون من جزئيين: الجزء الأول: هو البيانات الديموغرافية لعينة الدراسة والجزء الثاني: معارف الممرضين حول عوامل خطر النزيف للعلاج المميع للتخثر لمرضى الذين يعانون من الانصمام الرئوي الحاد يشمل 20 فقرة. تم التحقق من صدق الاستبانة من خلال عرضه على (13) خبيراً، وأجريت دراسة تجريبية للتحقق من مصداقية الاستبانة (معامل ارتباط بيرسون = 0.86). لتحليل نتائج الدراسة تم استخدام الإحصاء الوصفي والاستنتاجي باستخدام الحزمة الإحصائية للعلوم الاجتماعية (SPSS) وبرنامج ميكروسوفت اكسل (2016).

النتائج: أشارت نتائج هذه الدراسة اكثر من ثلثي معارف الممرضين كانت معتدلة بنسبة (67.5 %) وبمتوسط حساب (1.44) من مستوى معارف الممرضين.

الاستنتاج: استنتج الباحث إلى أن معارف الممرضين كانت معتدلة حول عوامل خطر النزيف للعلاج المميع للتخثر لمرضى الذين يعانون من الانصمام الرئوي الحاد في وحدة العناية القلبية.

التوصيات: أوصت الدراسة بإمكانية مشاركة جميع ممرضي العناية القلبية في دورة دورات تعليمية/ تثقيفية خاصة وتشجيعهم وتحفيزهم لتحسين المعارف حول عوامل خطر النزيف للعلاج المميع للتخثر لمرضى الذين يعانون من الانصمام الرئوي الحاد وهناك حاجة لإجراء دراسات مماثلة في حجم عينة أكبر وفترة زمنية كافية.

كلية التمريض
جامعة القادسية

تقييم معارف الممرضين بعوامل الخطر النزيف لدى مرضى الانصمام الرئوي الحاد الذين يتلقون العلاج المميع للتخثر في وحدة العناية القلبية في مستشفى الديوانية التعليمي

رسالة نتقدم بها

إلى

كلية التمريض/ جامعة القادسية

كجزء من متطلبات نيل شهادة البكالوريوس في علوم التمريض

إشراف

م.م. بهاء مرزه صخيل

مقدم من قبل طلاب كلية التمريض/ جامعة القادسية
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