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Evaluation Health care provider knowledge concerning management of patient with cardiogenic shock in wasit government

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هاني البدري

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بِسْـمِ اللَّهِ الرَّحْمَنِ الرَّحِيـمِ

(يَرْفَعِ اللَّهُ الَّذِينَ آمَنُوا مِنكُمْ وَالَّذِينَ أُوتُوا الْعِلْمَ دَرَجَاتٍ)

(المجادلة: 11)

الاهداء

إلى صاحب السيرة العطرة، والفكر المُستنير؛

فلقد كان له الفضل الأوَّل في بلوغي التعليم العالي

(والدي الحبيب).

إلى من وضعتني على طريق الحياة، وجعلتني رابط الجأش،
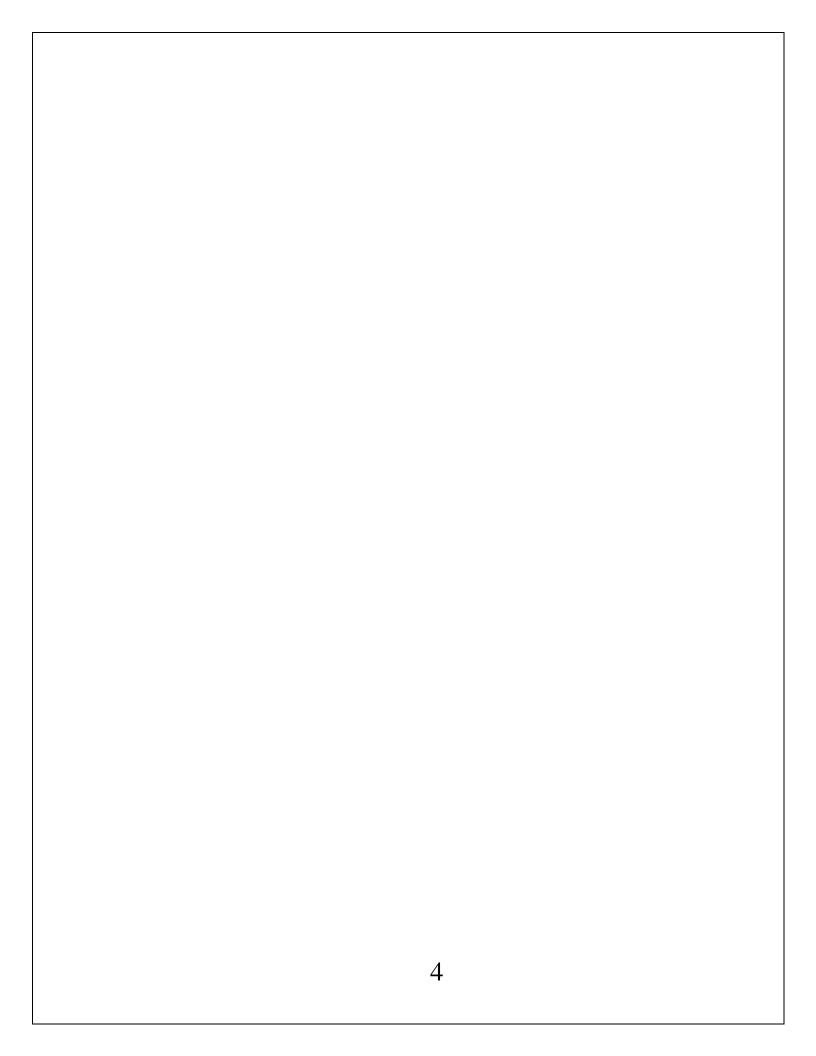
وراعتني حتى صرت كبيرًا

(أمي الغالية).

إلى إخوتي ؛ من كان لهم بالغ الأثر في كثير من العقبات والصعاب.

إلى جميع أساتذتي الكرام ؛

ممن لم يتوانوا في مد يد العون لي وبالخصوص الاستاذ (هاني البدري)

أُهدي إليكم بحثي .....

Contents

Terminology

SVR	systemic vascular resistance
CVP	central venous pressure
WHO	World Health Organization
STEMI	ST-segment–elevation myocardial infarction
PCWP	pulmonary capillary wedge pressure ER
NSTEMI	non-ST-segment–elevation myocardial infarction
CS	Cardiogenic shock
CO	low cardiac output
PCI	Percutaneous coronary intervention
MI	myocardial infarction
MCS	mechanical circulatory support
ICU	intensive care unit
SBP	systolic blood pressure
CI	cardiac index

Chapter one

1.1. Introduction

Nurses as one of the health service providers and members in health system who are responsible for giving care to the clients and patients based on ethical issues. They need ethical knowledge to conduct their appropriate function to manage situations and to give safe and proper legal and ethical care in today's changing world. With regard to practical care, they always try to answer the question of "What can I do?," whereas they should try to answer what is essential to be done for the patients in the context of ethical principles. Ethics seek the best way of taking care of the patients as well as the best nursing function. (Shahriari &Mohammadi, 2013)

Shock is the clinical expression of circulatory failure that results in inadequate cellular oxygen utilization. Shock is a common condition in critical care, affecting about one third of patients in the intensive care unit (ICU). A diagnosis of shock is based on clinical, hemodynamic, and biochemical signs, which can broadly be summarized into three components. First, systemic arterial hypotension is usually present, but the degree of the hypotension may be only moderate, especially in patients with chronic hypertension. Typically, in adults, the systolic arterial pressure is less than 90 mm Hg or the mean arterial pressure is less than 70 mm Hg, with associated tachycardia. Second, there are clinical signs of tissue hypoperfusion, which are apparent through the three "windows" of the body: cutaneous (skin that is cold and clammy, with vasoconstriction and

cyanosis, findings that are most evident in low-flow states), renal (urine output of 1.5 mmol per liter) in acute circulatory failure (Vincent & De Backer, 2013)

1.2. Importance of study

Cardiogenic shock complicates 5% to 10% of cases of acute MI and is the leading cause of death after MI. ST-segment–elevation myocardial infarction (STEMI) is associated with a 2-fold increased risk for development of CS compared with non– ST-segment–elevation myocardial infarction (NSTEMI). Patients with NSTEMI-associated CS are less likely to undergo early cardiac catheterization, delaying PCI and/or coronary artery bypass graft and increasing the risk of mortality compared with patients with STEMI-associated CS. Higher incidences of CS are observed in women, Asian/Pacific Islanders, and patients aged >75 years.The incidence of CS has increased in recent years, while the reason for increasing incidence is unclear, improved diagnosis and better access to care are both likely contributory. While the in-hospital mortality has improved, The risk of readmission is slightly lower among patients with STEMI as opposed to NSTEMI. The most common causes of readmission are congestive heart failure and new myocardial infarction. Female sex, low socioeconomic status, atrial fibrillation, and ventricular tachycardia are predictors of readmission (Vahdatpour, Collins, & Goldberg, 2019)

Understanding shock important in identifying the state of the patient in shock . Anxiety, confusion and pain are all indicators that can be observed.

The nurse should regularly assess the patient's conscious level and assessment should be used in conjunction with the Clasgow coma score, with any deterioration reported immediately. (Adam, et al., 1997)

1.3. Statement of the Problem

Evaluation Health care provider knowledge concerning management of patient with cardiogenic shock in wasit governments

1.4. Objective of study

The study aims to:

1- Assess the health care provider knowledge about management of cardiogenic shock

2- Find out the relationship between health care provider   knowledge about the mangment of cardiogenic shock and their level of education, year of experiences, and training course

Chapter two (Review of literature)

2.1. Shock definition

Shock is defined as acute circulatory failure with inadequate or inappropriately distributed tissue perfusion resulting in generalized cellular hypoxia. Clinical features of shock are usually those of tissue hypoperfusion ,This is most easily detected in the skin as central pallor, peripheral cyanosis, and increased capillary refill time. It is important to note that the traditional vital signs are less reliable indicators of shock and shock cannot be excluded just on the basis of normal blood pressure (systolic blood pressure (SBP) 40 mmHg from baseline. The complex interplay between the sympathetic and parasympathetic autonomic nervous system can produce pulse rates and blood pressures that are normal, high, or low. Furthermore, in shocked patients with end-organ hypo-perfusion, oxygen delivery to the tissues is not always reduced, and indeed may even be increased in some classes of shock (Teirney, Ahmed, & Nichol, 2017)

2.2. Classification of the shock

A classification based on cardiovascular characteristics, is the most accepted one amongst many others that have been given. It divides the syndrome into four major categories: hypovolemic, cardiogenic, extracardiac obstructive and distributive However, this is just an artificial

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separation and there is a frequent, considerable initial mixing and overlap within these categories.

Hypovolemic Shock It is characterized by a loss in circulatory volume, which results in decreased venous return, decreased filling of the cardiac chambers, and hence a decreased cardiac output which leads to increase in the systemic vascular resistance (SVR). The haemodynamic profile on monitoring of flow pressure variables shows low central venous pressure (CVP), a low pulmonary capillary wedge pressure (PCWP), low cardiac output (CO)   The arterial blood pressure may be normal or low.

Cardiogenic Shock This is primarily dependent on poor pump function. Cardiogenic shock due to acute catastrophic failure of left ventricular pump function is characterized by high PCWP, low CO and CI, and generally a high SVR.

Distributive or Vasogenic shock This type of shock is associated with not only poor vascular tone in the peripheral circulation but maldistribution of blood flow to organs within the body also. The CO varies, but is usually raised. A common haemodynamic profile is a low or normal PCWP, a high CO, a low arterial blood pressure, and a low SVR.

Extracardiac obstructive shock It is associated with a physical impairment to adequate forward circulatory flow involving mechanisms different than primary myocardial or valvular dysfunction. Several hemodynamic patterns may be observed, depending on the cause, from frank decrease in filling pressures (as in mediastinal compressions of great veins); to trends towards

equalization of pressures in the case of cardiac tamponade; or to markedly increased right ventricular filling pressures with low PCWP in the case of pulmonary embolism. Cardiac output is usually decreased with increased SVR(Sethi, et al.,2003)

2.3. Stages of shock

Shock is a physiologic continuum . It begins with an inciting event, such as a focus of infection (eg, abscess) or an injury (eg, gunshot wound), triggering pathophysiological changes, which can progress through several stages. The early stages of shock (pre-shock, shock) are more capability to therapy and are more likely to be reversible, compared with end-stage shock, which is associated with irreversible end-organ damage and death.

Pre-shock

Pre-shock is also known as compensated shock . It is characterized by compensatory responses to diminished tissue perfusion [1. As an example, in early hypovolemic pre-shock, a compensatory tachycardia and peripheral vasoconstriction may allow an otherwise healthy adult to be asymptomatic and preserve a normal or mildly elevated blood pressure despite a 10 percent reduction in total effective arterial blood volume. Thus, tachycardia, a modest change in systemic blood pressure (increase or decrease), or mild to moderate hyperlactatemia, may be the only clinical signs of early shock . Potentially, with timely and appropriate management, deterioration can be

prevented and signs of impending deterioration can be reversed (eg, normalization of heart rate and serum lactate levels).

●**Shock** – During shock, the compensatory mechanisms become overwhelmed, and signs and symptoms of organ dysfunction appear including symptomatic tachycardia, dyspnea, restlessness, diaphoresis, metabolic acidosis, hypotension, oliguria, and cool, clammy skin. The signs and symptoms of organ dysfunction typically correspond to a significant pathophysiologic alarm

●**End-organ dysfunction** – Progressive shock leads to irreversible organ damage, multiorgan failure (MOF), and death. During this stage, anuria and acute renal failure develop, acidemia further depresses CO, hypotension becomes severe and refractory to therapy, often related to vasoplegia, hyperlactatemia often worsens, and restlessness evolves into obtundation and coma. Death is common in this phase of shock.(Gaieski, Mikkelsen,2016)

2.4. Definition of cardiogenic shock

The generally accepted definition of CS is a state in which ineffective cardiac output (CO) due to a primary cardiac dysfunction results in inadequate end-organ perfusion. Current CS-defining criteria used in clinical trials and guidelines are varied, and recommendations are largely

based on data from patients with CS due to acute coronary syndrome (ACS). Improved understanding of the pathophysiological process and identification of specific criteria for classification in this widely heterogeneous population is critical for early identification and appropriate management of patients with CS.(Jones,*et al.,2019)*

2.5. Epidemiology of cardiogenic shock

Cardiogenic shock complicates 5% to 10% of cases of acute MI and is the leading cause of death after MI. ST-segment–elevation myocardial infarction (STEMI) is associated with a 2-fold increased risk for development of CS compared with non–ST-segment–elevation myocardial infarction (NSTEMI). Patients with NSTEMI-associated CS are less likely to undergo early cardiac catheterization, delaying PCI and/or coronary artery bypass graft and increasing the risk of mortality compared with patients with STEMI-associated CS.Higher incidences of CS are observed in women, Asian/Pacific Islanders, and patients aged >75 years. The incidence of CS has increased in recent years, while the reason for increasing incidence is unclear, improved diagnosis and better access to care are both likely contributory. While the in-hospital mortality has improved, the 6- to 12-month mortality in cardiogenic shock has remained unchanged at ≈50% over the past 2 decades. (Vahdatpour, Collins, & Goldberg, 2019)

2.6. Causes of cardiogenic shock

Acute myocardial infarction or Global ischaemia

Left or right ventricular failure caused by Large infarction

• Small/moderate infarction with- pre-existing dysfunction

Mechanical complications (Acute mitral regurgitation with - severe papillary muscle dysfunction,Ventricular septal defect caused by rupture of the interventricular septum and Pericardial tamponade owing to rupture of the left ventricular free wall or haemorrhagic pericardial effusion.

Concomitant conditions causing mixed aetiology(Haemorrhage ,Infection, Excess vasodilator medications, Sustained bradyarrhythmia or tachyarrhythmia and Hyperglycaemia or ketoacidosis)

Other conditions(End-stage cardiomyopathy,Myocarditis

• Aortic stenosis Acute mitral regurgitation ,Acute aortic insufficiency, Global ischaemia and Cardiac tamponade (extensive fluid collecting in the pericardial space) (Reyentovich, Barghash & Hochman,2016)

Methodology

This chapter presents the research design that has been used in this study. It included the sample selection, instrument construction, pilot study, methods of data collection and data analysis.

3.1. Design of the Study.

A descriptive analytical study is carried out on 50 nurses , from the period of November , 2m 2023 to May, 30m 2024.

3.2. Seting of the Study.

The present study is carried out in all units of the B Al Karrama Teaching Hospital in wasit

3.3. Sample of the Study.

A purposive (Nan probability) sample of (50) nurses

3.4. Criteria of the Sample Selection

The criteria for selecting the study samples are: Those who works at morning shift ,Male and female nurses. ,All the educationaI level of nurses, And Nurses who have agreed to participate in the study.

3.5. Instrument Construction

The instrument was constructed through the review of the literature which is consists of three parts:

Part I: The demographic data includes nurses' characteristic (4 Items) which as age, gender, level of education, and maritaI status

Part Il: consist of (4 Items) which as years of experience, years of experience in emergency, training course. emergency and the training course in or out of iraq

Part III: part three consist of (78 items) deals the nurses knowledge related to Cardiogenic shock which include the nurses knowledge regarding to the nature of cadiogenic shock such as. Cardiogenic shock occur when heart loss its pumping ability because of conditions that directly affect heart function, Cariogenic shock causes are Congenital heart disease, Myocardial infarction and myocardial necrosis, Cadriogenic shock has some early clinical manifestations; e.g.: coma, bradycardia, clamed and bluish skin,and hypotension (90mm/Hg), The physiological nature of cardiogenic shock is

reducing in cardiac output with increase heart pumping to compensate the hypotension and The differentiation between various types of shock such as: hypovolemic shock, cardiogenic shock and septic shock

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