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Health Review

Nursing care for patients diagnosed with acute myocardial infarction in the intensive care unit: a narrative review

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Abstract: Cardiovascular diseases are among the main pathologies that cause deaths in Brazil, and directly contribute to the increase in the number of intensive care unit hospitalizations. These cardiological dysfunctions are caused by several factors that must be treated immediately after the appearance of the first signs and symptoms. The care environment in the Intensive Care Unit (ICU), the focus of the present study, is an environment intended to assist seriously ill and unstable patients that are usually in a hospital setting and is considered high complexity due to its cutting-edge technological and computerized apparatus. The role of the nurse begins as soon as the patient is admitted upon arriving at healthcare facilities in general, with the main function of early diagnosis and immediate initiation of emergency care, increasing the patient's chances of survival. The early diagnosis of myocardial infarction (MI) and therapeutic interventions directly affect the morbidity and mortality of patients. Therefore, this study aimed, through a narrative review, to highlight the main risk factors and understand the importance of nursing care in the assistance of patients with Acute Myocardial Infarction in the Intensive Care Unit.

Keywords: Acute Myocardial Infarction; Nursing Care; Intensive Care Unit.

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1. Introduction

Cardiovascular diseases are among the main pathologies that cause deaths in Brazil, and directly contribute to the increase in the number of intensive care unit hospitalizations. These cardiological dysfunctions are caused by several factors that must be treated immediately after the appearance of the first signs and symptoms. Acute myocardial infarction (AMI) is the result of a lack of oxygen that nourishes the heart muscle caused by a blood obstruction. This leads to myocardial injury and consequent necrosis of varying dimensions in the affected region, depending on determining factors such as the diameter of the affected artery, time of obstruction evolution, and collateral circulation development.

There are numerous factors responsible for causing acute myocardial infarction, including age, high cholesterol, smoking, stress, excessive alcohol consumption, systemic arterial hypertension (SAH), and diabetes mellitus (DM), which favor fat deposition on the blood vessels' walls, as well as obesity and sedentariness, which are subsequent factors to those previously described. According to the Brazilian Unified Health System's (DATASUS) Informatics Department, between the years 2010 and 2021, 1,066,194 cases of hospitalizations were diagnosed with AMI [1]. According to Piegas et al. [2], in 2010 alone, the number of deaths from ischemic heart diseases reached 99,408, or 52.11 deaths per 100,000 inhabitants, highlighting the high number of cases and significant investment in the health system to treat this pathology [2].

The diagnosis of acute myocardial infarction (AMI) is carried out by the multidisciplinary healthcare team through physical exams, such as performing anamnesis, clinical examinations, and laboratory tests. The electrocardiogram (ECG), also known as an ECG, is one of the main tests performed to identify the disease, which aims to evaluate the heart's electrical activity, making it possible to verify the rhythm and heartbeat frequency. Another exam would be Troponin I, which, after analysis, if levels indicate high values, means the possibility of cardiac damage.

A care environment involves multiple dimensions of care and comprises a set of elements that integrate it. It needs to consider the whole that involves the parts, as well as the parts that involve the whole, as argued by the creator of complex thinking. In this perspective, the healthcare/nursing care environment needs to be better known and understood to reach a systemic dimension. It must be apprehended as a circular process that considers both the individual who needs care and the conditions in which it is carried out, the human and material resources available, interpersonal relationships, interactions between healthcare professionals, patients, and family members, as well as interactions with the environment [3].

The care environment in the Intensive Care Unit (ICU), the focus of the present study, is an environment intended to assist seriously ill and unstable patients that are usually in a hospital setting and is considered high complexity due to its cutting-edge technological and computerized apparatus. It presents an accelerated rhythm, in which aggressive and invasive procedures are performed, and where the duel between life and death is very present, with death often imminent [4].

The ICU is often stigmatized and can generate misconceptions about the care and attitudes of the team. Likewise, the ICU is also seen as an environment that generates myths, contradictory sensations, and feelings such as anguish, fear, sadness, pain and suffering, security, and insecurity, both in patients and their families, as well as in professionals. There are several factors to be considered within an ICU. The role of the nurse begins as soon as the patient is admitted upon arriving at healthcare facilities in general, with the main function of early diagnosis and immediate initiation of emergency care, increasing the patient's chances of survival. The early diagnosis of myocardial infarction (MI) and therapeutic interventions directly affect the morbidity and mortality of patients [5].

Therefore, this study aimed, through a narrative review, to highlight the main risk factors and understand the importance of nursing care in the assistance of patients with Acute Myocardial Infarction in the Intensive Care Unit.

2. Results

3.1 Factors associated with Acute Myocardial Infarction

Cardiovascular diseases, especially Acute Myocardial Infarction (AMI), are the leading causes of death among the elderly worldwide. Hypertension, which is highly prevalent among them, and smoking are risk factors for cardiovascular diseases and increase the risk of complications, negative outcomes, and death [6].

In addition to that, Santos and colleagues [7] highlighted in their study that the main risk factors associated with the development of AMI are smoking, family history of cardiovascular diseases (CVDs), serum level of Low-Density Lipoproteins (LDL), Systemic Arterial Hypertension (SAH), and Diabetes Mellitus. Therefore, family history is also a factor of great relevance, as when a "relative" has already presented the pathology, the individual is more likely to develop the disease due to hereditary factors, aggravating the factors that favor the development of AMI [8].

Ponte and Silva [9] reported in their study that precordial pain was reported by all patients, being present since admission. The authors also reported on the main signs and symptoms, with emphasis on headache, difficulty in sleeping, nausea, cold skin,

hypertension, bradycardia, anxiety, and pain [8]. It was found that, according to the third chronic guideline for heart failure, the etiology of heart failure is associated with dilated and ischemic cardiomyopathy, uncontrolled systemic arterial hypertension, and Diabetes Mellitus, as well as hospitalizations for the decompensation of this condition [10].

In this sense, AMI can be understood, within cardiovascular disorders, as an ischemia resulting from the lack of blood supply to the coronary arteries and that can lead to necrosis of the heart muscle. This condition persists throughout life, making people need permanent care with the risk of recurrence [11]. Oliveira and colleagues [12] highlighted in their research (results) that patients who are affected by AMI need adequate clinical treatment with percutaneous angioplasty or thrombolytic therapy. Through this process, some medications are used to help relieve pain, aiming to reduce muscle injury, with emphasis on anticoagulants, antiplatelets, vasodilators, as well as nitroglycerin, acetylsalicylic acid, morphine, and heparin [8].

According to the National Academy of Palliative Care, physical exercise programs can bring benefits to functionality and quality of life indices, even in patients with advanced disease, in addition to psychosocial therapies, leisure activities, guidance on adapting the environment and daily activities, measures for sleep hygiene, and psychological, family, and nutritional support being useful in the overall care of these patients [10].

3.2 Role of the nurse in the face of a patient diagnosed with MI in Intensive Care

The use of tools such as algorithms does not exempt the nurse from a careful evaluation of the patient. Critical thinking is something that needs to be at the essence of the professional, as like any technology, it can present faults. Likewise, for the success of a tool, the entire team that will use it needs to be trained in its application and evaluation of its results [13]. Cardiological evaluation is of utmost importance since the symptoms that patients may manifest establish priorities in care. The cardiovascular system plays an important role in maintaining the human body. Its main function is to deliver oxygenated blood to the tissues and remove blood with CO_2. As the nurse is closer to the patient, it is he who frequently detects clinical changes [14].

The use of protocols does not aim to fragment, generalize, or standardize nursing care, but rather includes actions that range from general to specific, directing nursing care to encompass the needs that are affected at that time [14]. To ensure greater quality and safety in care for this specific population, it is necessary to recognize the non-modifiable risk factors and work exhaustively on the main modifiable exposure agents, train the multidisciplinary team, and standardize the use of routine detection instruments [6]. It became relevant to propose a study that evidences a new nursing tool to document its diagnoses and interventions, which encompass the patient's needs through a holistic view, including both physiological and spiritual and emotional needs [10].

In this context, the nurse should lead their team, maintaining continuous cardiac monitoring, constantly evaluating for arrhythmias, level of consciousness and pain, vital signs, and observing changes in the control electrocardiogram. Nursing is fundamental for the elaboration of care for the patient with MI, being a profession that has been aiding and knowledge to treat the problems of this disease since ancient times [8].

4. Conclusions

MI (Myocardial Infarction) is one of the main cardiovascular pathologies that causes death in the world, resulting from the obstruction of vessels, which ends up hindering the passage of blood flow to the heart, causing the death of cardiac cells. In this study, it was possible to identify several risk factors that directly influence the development of MI, among them the main ones are Diabetes Mellitus (DM), Systemic Arterial Hypertension (SAH), smoking, obesity, and sedentary lifestyle.

With the data, it is important that the population is aware of the need to adopt healthy habits in their daily routine, among them, we can mention consumption of healthy foods that have low sodium, lipid and sugar content, physical exercise, increased water intake, not smoking, thus proposing a satisfactory quality of life.

Based on this study, it is perceived that the nursing professional is the first to have direct contact with the patient, from Urgency and Emergency to the ICU sector, so it is necessary for the same to outline an individual and specialized care plan, using nursing diagnosis and interventions with the aim of proposing quality and effective care.

Therefore, it is necessary for the nursing team to be composed of trained, qualified, and highly efficient professionals with theoretical knowledge, as it is necessary to diagnose signs and symptoms as quickly as possible, to be able to proceed with hospitalization, and the patient has a greater chance of rehabilitation.

In addition, when entering the ICU, the care of the multidisciplinary team must be specialized and humanized, as patients depend on the assistance of these professionals to fully recover. Therefore, it is hoped that this study can contribute to future research that addresses the same theme, collaborating in the sharing of scientific knowledge.

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References

1. Brasil, Ministério da Saúde. Banco de dados do Sistema Único de Saúde - DATASUS. Informações de Saúde, Sistema de Informações sobre Mortalidade. 2021.
2. Piegas LS, Avezum A, Guimarães HP, Muniz AJ, Reis HJL, Santos ES, Knobel M, Souza Rd. Comportamento da síndrome coronariana aguda: resultados de um registro brasileiro. Arq Bras Cardiol. 2013;100(6):502-510.
3. Pina RZ, Lapchinsk LF, Pupulim JSL. Percepção de pacientes sobre o período de internação em unidade de terapia intensiva. Cienc Cuid Saude. 2008;7(4):503-508.
4. Martins JT, Robazzi MLC, Garanhani ML. Sentimentos de prazer entre enfermeiros de unidades de terapia intensiva. Ciencia y Enfermería. 2009;15(3):45-53.
5. Caveião C, Santos RB, Montezeli JH, Visentin A, Brey C, Oliveira VBCA. Dor torácica: atuação do enfermeiro em um pronto atendimento de um hospital escola. Rev Enferm Cent Oeste Mineiro. 2014;4(1):921-928.
6. Matioli KB, Guimarães MCA, Arantes LP, Martins AS, Magalhães LP, Bocchi EA. Delirium: prevalência e fatores associados ao pós-operatório de cirurgia cardiovascular em idosos. Rev Baiana Enferm. 2021;35:e48459.
7. Santos BS, Sousa JS, Teixeira LS, Sales JBO, Oliveira CFF, Vieira LP. Infarto agudo do miocárdio: abordagem com enfermeiros de uma unidade intensiva coronariana. Rev Enferm UFPE On Line. 2017;11(Suppl 5):5153-5155.
8. Silva WP, Andrade FRA, Araújo GM, Rocha NG, Souza JF, Costa IKS. Cuidados de enfermagem a pacientes acometidos com infarto agudo do miocárdio. Res Soc Dev. 2022;11(11):e19111133072.
9. Ponte KMA, Silva LFC. Cuidados de enfermagem a mulheres com infarto do miocárdio: promoção do conforto sociocultural pela pesquisa-cuidado. Rev Enferm UERJ. 2014;22(6):808-814.
10. Pedrão TGG, Viana AGS, Pereira Junior GA, Ferreira ALA, Rosa LFT, Ferreira RC. Diagnósticos e intervenções de enfermagem para pacientes cardiológicos em cuidados paliativos. Rev Enferm UFPE On Line. 2018;12(10):3038-3045.
11. Santos JCA, Piaggi LFD. Percepção do enfermeiro sobre o atendimento ao paciente com suspeita de infarto agudo do miocárdio. Rev Mineira Ciên Saúde. 2017;1(1):1-13.
12. Oliveira LAM, Silva VLS, Santos AMPN, Bezerra SMMS, Holanda MAL, Gomes VBO. Cuidados de enfermagem ao paciente com infarto agudo do miocárdio: uma revisão integrativa. Braz J Surg Clin Res. 2019;28(3):77-79.
13. Spitz VM, Cunha LCV, André AGM, Oliveira JFP, Silva NA, Júnior JMM. Banho no leito de pacientes com síndrome coronariana aguda: descrição de algoritmo. Online braz j nurs. 2018;17(3):331-336.
14. Silva GC, Fagundes TC, Almeida AAC, Chaves EC. Protocolo de enfermagem no implante de valva aórtica transcateter: um direcionamento para o cuidado. Esc Anna Nery. 2018;22(4):e20180110.