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KNOWLEDGE OF NURSES IN THE USE OF ALTEPLASE: INTEGRATIVE REVIEW

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Summary

Health professionals, especially nurses who follow the entire fibrinolytic therapy procedure, should be aware of the mechanisms of action of alteplase, especially its contraindications.

Objective: To identify the knowledge of the nursing professional in the administration of the use of alteplase in urgency and emergency. **Method:** This is an Integrative Review, conducted from July to September 2019, the study included publications of scientific articles, selected and published from 2014 to October 2019, available electronically in full text, in Portuguese, English and Spanish in the aforementioned Latin American and Caribbean Literature in Health Sciences (LILACS), Scientific Electronic Library (SciELO), BDEF (Nursing Database), PUB (International Literature in Health Sciences) databases. **Result:** A total of 07 articles were part of this study. Identified in SciELO 05 articles in LILACS 02 articles. No articles were selected in BDEF and pubmed database according to eligibility criteria. The number of articles eligible for the research was 07 articles. **Conclusion:** The present study highlights the need for a targeted approach to the clinical practice of nurses addressing the need for clarification and training regarding the handling and knowledge of the use of Alteplase, opening precedents for future research.

Keywords: Myocardial infarction, Nurse, Alteplase.

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Introduction

One of the main causes of mortality in adults refers to cardiovascular diseases (CVD) affecting both sexes worldwide, being considered one of the dominant causes in relation to premature deaths, occurring in 75% in low-income and middle-income countries. In relation to Brazil, there is a tendency to decline, but it is still considered one of the main causes of death in adults¹. There is a decline observed in recent years in relation to cerebrovascular diseases, however, even with recent advances in clinical and interventional treatments, ischemic heart diseases caused 116,333 deaths in 2016, making up 80% related to acute presentations, consisting of acute myocardial infarction². It is noteworthy that the World Health Organization (WHO) assumes that by 2030, the estimate reaches 23 million deaths from cardiovascular diseases³. The high prevalence of these diseases can be explained both by the increase in the age group of the population and by exposure to classically known risk factors such as inadequate eating habits, physical inactivity, smoking, alcoholism, increased prevalence of obesity, stress, in addition to socioeconomic factors⁴. In the midst of cardiovascular diseases, Acute Myocardial Infarction (AMI) represents an important public health problem in the world and in Brazil, presenting high incidence, prevalence and mortality rates². Barbosa et al(2019), report that AMI can lead to death, and annually, 7.4 million people may be affected³. Acute myocardial infarction (AMI), is currently considered an

important public health problem in Brazil⁵. The majority of deaths caused by AMI occur in the first hours of disease manifestation, with 40%-65% of cases in the first hour and approximately 80% in the first 24 hours. Thus, most deaths from AMI occur outside the hospital environment, usually unassisted by physicians⁶. Changes started with the approval of the thrombolytic agent Alteplase, or recombinant plasminogen activator (rt-PA), but even with its proven efficacy, its treatment still represents challenges regarding its implementation, and its therapy⁷.

In this priori, the nursing practice with the patient with AMI becomes extremely relevant through the need for the management of care based on a field of specialized knowledge, since the nurse is required skills and competencies to provide individualized and holistic care⁸. Important advances have occurred in thrombolytic therapy, providing a decrease in the mortality of patients affected by infarction. It is worth mentioning, the role of the nursing professional in relation to the knowledge of thrombolytic drugs, because the handling, administration, and the presence of possible complications are often identified through the technical and scientific preparation of the nursing professional⁹. However, nursing is responsible for the primary follow-up and provision of continuous care to its patients, based on institutional protocols, based on anamnesis, identification of alterations and monitoring of the parameters established among others¹⁰. In view of the above, the following northern question arises. What is

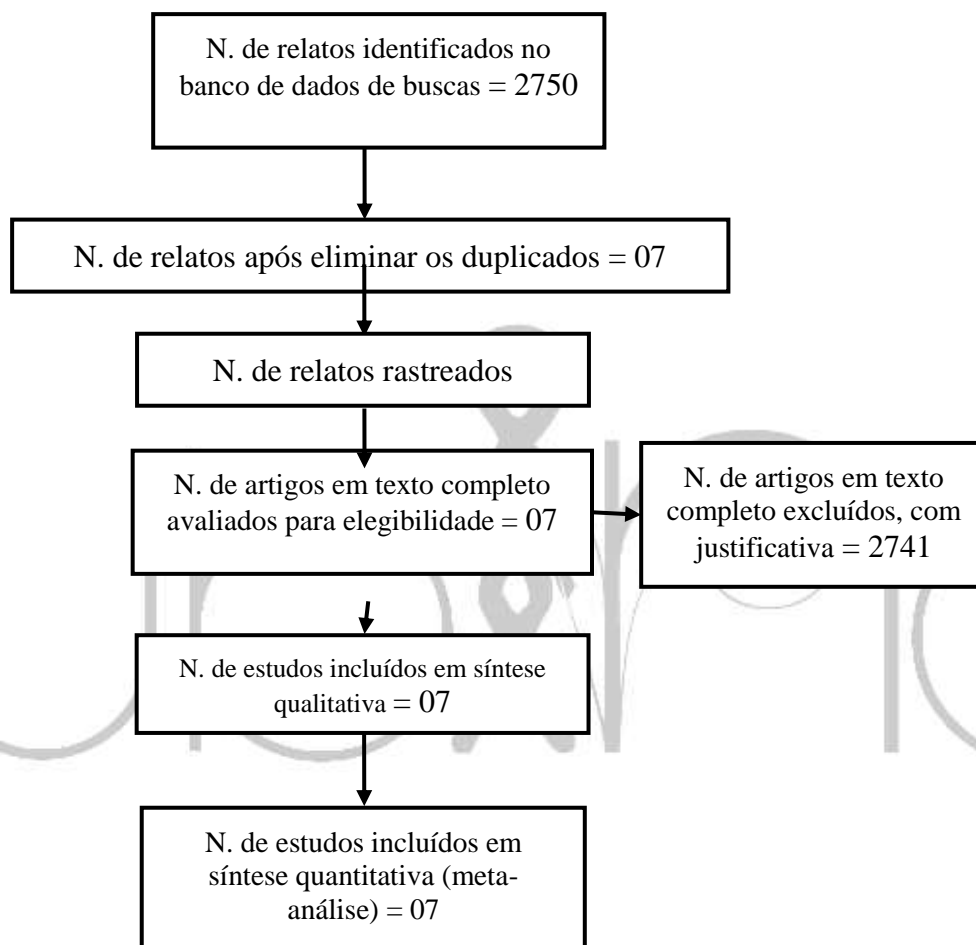
the knowledge of nurses regarding the administration of alteplase? Therefore, the aim of this study was to identify the knowledge of the nursing professional in the administration of the use of alteplase in urgency and emergency.

Method

This is an integrative review, carried out from July to September 2019. The review of the process was based on the recommendations of the preferred reporting items for systematic reviews and meta-analyses¹¹ (PRISMA) conference list. The Integrative Review refers to a method that allows the synthesis of multiple published studies enabling general conclusions about a particular area of study^{12,13}. The integrative review occurred in six stages: Phase 1 - Identification of the theme and hypothesis of research problem for the elaboration of the integrative review; Phase 2 - Establishment of criteria for inclusion and exclusion of studies found in the search for literature; Phase 3 - Categorization of studies and data collection; Phase 4 - Evaluation of the studies included in the integrative review; Phase 5 - Interpretation and discussion of results; Phase 6 - Presentation of the integrative review. After delimitation, it was followed with the evaluation of the research problem and its stratification following the PVO strategy (Population / Problem, Variable and Results / Outcomes). The mnemonic PICO was applied to define the guide question: What is known by the nurse in the administration

of alteplase? The searches were carried out in the databases the Latin American and Caribbean Literature on Health Sciences (LILACS), Scientific Electronic Library (SciELO), BDNF (Nursing Database) indexed the virtual health library, and pubmed (International Literature in Health Sciences). The study included the eligibility criteria, which included publications of scientific articles, selected and published from 2014 to 2029, available electronically in full text, in Portuguese, English and Spanish. We used the health terminology consulted in the Descriptors in Health Sciences (DeCS) and the Medical Subject Headings (MeSH), by which the respective descriptors were identified: alteplase AND NURSE, alteplase AND acute infarction, fibrinolytic AND acute infarction, nurse AND alteplase AND myocardial infarction. Repeated articles were excluded, those that even entering the search did not fit the theme, reviews, book chapters, dissertations or theses. An instrument adapted by the researchers was used for the analysis of methodological rigor that allowed the survey to be raised, containing mainly the following variables: Database, Parents of origin, Title, Type of study, Authors, Journal and year of publication. All selected articles were submitted to thorough reading, performed in two stages: in the first one, the synthesis of the identification data and the characterization of the sample were performed and, in the second, the analysis of the content of the articles, being validated by two researchers.

Figure 1 - Flowchart of identification, selection and inclusion of studies of the integrative review of the literature. São Paulo, SP, 2020.



Result

Source: search data.

Table 1 shows the characterization of the main studies developed included in the integrative review through: Database, Parents of origin, Title, Type of study, Authors, Journal and year of publication, São Paulo- SP.

Databases	Parents of origin	Title	Type of study	Authors	Journal and year of publication
Lilacs	Brazil	Fibrinolytics: indications and treatment of bleeding complications	Literature review	Baruzzi, Antonio Cláudio do; Stefanini, Edson; Manzo, Gianni	Rev. Soc. Cardiol. State of Sao Paulo; 28(4): 421-427, Oct.-Dec. 2018.
Scielo	Spain	Streptoquinasa a casi 30 años	Literature review	Casola Crespo Roberto, Casola	Archivo Medical Magazine de

		demostrada su eficacia en el infarto agudo de miocardio		Crespo Eugenio, Castillo Sánchez Gregorio, Casola Barreto Eugenio.	Camaguey, AMC vol.20 no.1 Camaguey ene.-feb. 2016.
Scielo	Uruguay	Infarction agudo de miocardio lejos de los centros de hemodinamia, percepción de la calidad de vida postratamiento con fibrinolytics y factors related	Observational, retrospective study with prospective follow-up	Moreira Eduardo, Pintos Nury, Arteaga María De, Negreira Sandra Torres, Roza Rita Da, Albornoz Henry et al.	Rev. Urug. Cardiol. vol.34 no.1 Montevideo Apr. 2019.
Lilacs	Brazil	Acute myocardial infarction with ST supra: thrombolysis at any site where medication is available	Literature review	Baruzzi, Antonio ; Cláudio do Amaral ; Stefanini, Edson ; Pispico, Agnaldo .	Rev. Soc. Cardiol. State of Sao Paulo ; 28(4): 409-420, Oct.-Dec. 2018 .
Scielo	Uruguay	Fibrinolytics en el infarction agudo de miocardio. Análisis de una cohorte uruguaya en un periodo de cuatro años	Retrospective observational study	Frank Towers.	Rev.Urug.Cardiol. vol.32 no.2 Montevideo Aug. 2017
Scielo	Buenos Aires-Argentina	Acute coronary syndromes	Prospective and multicenter cardiovascular intensive care units	De Abreu Maximiliano, Natalia Vensentini, Javier Mariani, Juan Gagliardi, Doval Hernán, Carlos Tajer.	Medicine (B. Aires) vol.79 no.6 Autonomous City of Buenos Aires Dec. 2019
Scielo	Venezuela	Caracterización del infarto agudo de miocardio en pacientes treated at Ezequiel Zamora Integral Diagnostic Medical Center in Venezuela	Serial study of 34 patient cases	Batista González Marilina, Escalona Ballester Yurisván.	Integral Diagnostic Medical Center, ccm. Ezequiel Zamora of Venezuela. ccm [Internet]. vol.19 no.4 Holguín oct.-dic. 2015.

Source: author, 2020.

Discussion

Fibrinolytics are molecules that activate plasminogenics in plasmin, which act directly on the fibrin present, no clot disfacing or thrombus^{14, 15, 19}. About 20 years ago I studied Fibrinolytic Therapy Trialist Collaborative (FTT), observed a

reduction in mortality between 18 25% after the first six hours from the start of AMI in 1000 patients, during the infusion of fibrinolytics. Ou seja, or the succession of fibrinolytic therapy is related to early infusion of the drug.^{14,15, 16, 17, 18, 21}. A strategy of reperfusion is aimed at saving

or maximizing myocardial cells, while also reducing the mortality of two patients with heart attack AMI.¹⁵ The benefits originating from this strategy are very important, because there is a better ventricular function, a favorable modification of the ventricular remodeling process, an electrical instability (arrhythmias), a greater opening of collateral circulation networks^{15,17,18}. Hemorrhagic Clot is one of the main complications, both fibrinolytic, subdural or intracranial or with higher mortality. Blood pressure and accompanying coagulopathy should be checked, apart from contraindications^{14,18,21}. Intracranial bleeding is more prevalent after the first 24 hours after the start of the Alteplase infusion, and should be done for those patients with poor neurological status. According to the authors, the hemorrhagic events that can occur without treatment, can be reversed, with the administration of platelets, antifibrinolytics and blood concentrate¹⁴. Due to the recent occurrence of the event, lack of training, inexperience of the emergency services team or prognosis, the patient ends up being compromised. For this reason, there is a need for training and training of teams to help them save this space^{14,17}.

For fibrinolytic therapy to be achieved or successful, the first attention to the AMI victim needs to be quick and objective. Identify patients with thoracic disease and carry out a 12-lead electrocardiogram, first and foremost actions to be carried out with disease, to initiate the diagnosis and consequently or initial management of this patient. The time elapsed between the

identification of the patient as the patient and the performance of the electrocardiogram should not exceed twenty minutes^{15,17, 18, 20}. Know the absolute contraindications, such as a history of Cerebral Vascular Accident less than six months, neoplasms, traumas or surgeries recent with less than three weeks, history of gastrointestinal bleeding with menstrual excess, punctures not compressed within the last 24 hours, primary and must be questioned before the start of treatment ^{15, 18}. Meanwhile there are relative contraindications such as transient ischemic accident or recurrent last six months, oral anticoagulant treatment, gestation in the first week after delivery, refractory hypertension (systolic pressure greater than 180 mmHg and diastolic pressure greater than 110 mmHg, advanced liver disease, infectious endocarditis, history of peptic ulcer, prolonged cardiopulmonary resuscitation, levied in consideration mainly due to the risk of Bleeding^{15, 18}. Initiated or treatment, or nurse will observe or disappear of the giver that will occur within minutes after or start of infusion, independent of administration of analgesics¹⁶. Regression of non-electrocardiogram ischemic alterations, mainly of the ST segment and reversal of the T wave with more than 50% of the isoelectric line, due to reperfusion of compromised artery at the first hour after the start of treatment^{16, 18}. Cardiac monitoring should not be interrupted because this There are arrhythmias that may occur may indicate that the treatment is running satisfactorily, due to or restoration of coronary flux^{15, 18}. In many

patients or acute restoration of coronary flux it can trigger a transient sinus bradycardia followed by hypotension, logo or hemodialysis state. Monitored at all times^{15, 18}. Given the importance of quick and objective attention, the need for organization, training and dissemination of two acquired knowledge is envisaged for a multiprofessional emergency team. E a patient guidance for the rapid recognition of two symptoms suggestive of AMI¹⁷.

Conclusion

The study consented to understand the knowledge that nurses working in a unit specialized in acute myocardial infarction have about the use of Alteplase to treat acute myocardial infarction. Through the benefits of medication, a limitation is pointed to its use, however the care of patients with acute myocardial infarction is seen as a medical emergency. Thus, it is believed that the knowledge of the investigated reality contributes to the construction of nursing knowledge, assisting nurses in the field of cardiology that provides direct care to these patients, deepening knowledge and decision-making improving clinical practice. In this perspective, it is necessary to need an approach directed to the clinical practice of nurses addressing the need for clarification and training regarding the handling and knowledge of the use of Alteplase, opening precedents for future research and studies in relation to the proposed theme.

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