شبكة المعلومات الجامعية

بسم اللّه الرحمن الرحيم

شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم

شبكة المعلومات الجامعية

جامعة عين شمس

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قسم

نقسم باللّه العظيم أن المادة التي تم توثيقها وتسجيلها علي هذه الأقراص المدمجة قد أعدت دون أية تغيرات

يجب أن

تحفظ هذه الأقراص المدمجة بعيدا عن الغبار

NURSING PERFORMANCE REGARDING MONITORING OF PATIENTS WITH ISCHEMIC STROKE DURING ADMINISTRATION OF TISSUE PLASMINOGEN ACTIVATOR DRUG

Thesis

Submitted for Partial Fulfillment of
Master Degree in ***Critical Care*** *Nursing*

By

Hayam Safwat Saad Mohammed
Faculty of Nursing - Ain Shams University
(B.Sc. Nursing, 2011)

Faculty of Nursing
Ain Shams University
2021

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Supervised by

Prof. Eman Talaat Mohammed
Prof. of Medical Surgical Nursing
Faculty of Nursing- Ain shams university

Dr. Mona Nadr Ebraheim
Assistant prof. of Medical Surgical Nursing
Faculty of Nursing- Ain shams university

Faculty of Nursing
Ain Shams University
2021

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Nursing Performance Regarding Monitoring of patients with Ischemic stroke during administration of Tissue Plasminogen Activator Drug

Hayam Safwat Saad *, Eman Talaat Mohammed **, Mona Nadr Ebraheim***

* B.Sc. In Nursing ** Professor of Medical Surgical Nursing, ***Assistant prof. of Medical Surgical Nursing, Faculty of Nursing - Ain Shams University

Abstract

Tissue plasminogen activator (TPA) requires intensive care of the patient. The risk of thrombolytic therapy and the need for rapid interventions make it clear that the nursing role during this time is crucial. **Aim:** This study aims to assess the nurses' performance regarding monitoring of patients with stroke during administration of TPA drug. **Design:** A descriptive exploratory design. **Subject:** A convenient sample of all nurses (30) was recruited to participate in the study. **Setting:** This study was conducted at the stroke unit at the neurology department affiliated to Ain Shams University Hospital. **Tools:** two tools were used for data collection; self-administered questionnaire and nurses' practice observational checklist. **Results:** the results of this study showed that, 100% of the studied nurses had unsatisfactory total knowledge and total practice and 73% of them had negative attitude regarding monitoring patients with ischemic stroke during administration of TPA drug. A positive statistically significant correlation between total level of nurses` practice and their total level of knowledge was found and no statistically significant correlation between total level of nurses` practice and knowledge and their total level of attitude. **Recommendation:** Providing in-service educational programs and upgrading courses based on evidence-based guidelines based on nurses' needs to improve their knowledge and practice related to administration of TPA drug. Knowledge sources in Arabic language must be provided for nurses in work place about TPA administration and the role of nurse pre, during and after administration.

Keywords: Tissue plasminogen activator, ischemic stroke, nursing performance, monitoring of patient

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List of Abbreviation

Abbreviation	Full-Term
ACEIs	: Angiotensin-Converting Enzyme Inhibitors
ASA	: American Stroke Association
BP	: Blood Pressure
CAS	: Carotid Angioplasty and Stenting
CDC	: Centers of Disease Control and Prevention
CEA	: Carotid EndArterectomy
CSF	: CerebroSpinal Fluid
CT	: Computed Tomography
DBP	: Diastolic Blood Pressure
DNA	: DeoxyriboNucleic Acid
ECASS	: European Cooperative Acute Stroke Study
ECG	: Electro CardioGram
ED	: Emergency Department
EMEA	: European Medicines Evaluation Agency
GCS	: Glasgow Coma Score.
Hct	: Hematocrit
Hgb	: Hemoglobin
HT	: Hemorrhagic Transformation
ICP	: IntraCranial Pressure
MRI	: Magnetic Resonance Imaging
NCCT	: NonContrast Computed Tomography
NINDS	: National Institute of Neurological Disorders and Stroke
OLAE	: Orolingual AngioEdema
PTT	: Partial Thromboplastin Time
SICH	: Symptomatic Intracranial Hemorrhage
TPA	: Tissue Plasminogen Activator
US	: United States
WHO	: World Health Organization

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INTRODUCTION

Stroke is the leading cause of long-term disability in developed countries and one of the top causes of mortality worldwide. The past decade has seen substantial advances in the diagnostic and treatment options available to minimize the impact of acute ischemic stroke. The key first step in stroke care is the early identification of patients with stroke and triage to centers capable of delivering the appropriate treatment, as fast as possible. Urgent reperfusion of the ischemic brain tissue is the major target of acute ischemic stroke treatment **(Phipps & Cronin, 2020)**.

Tissue Plasminogen Activator (TPA) is a powerful thrombolytic agent used in the lysis of acute thromboembolism. It is used as a first-line drug for the acute treatment of ischemic stroke. It acts within the endogenous fibrinolytic cascade to convert plasminogen to plasmin by hydrolyzing the arginine-valine bond in plasminogen. The activated plasmin then degrades fibrin and fibrinogen, allowing for the dissolution of the clot and re-establishment of blood flow **(Hughes, Tadi & Bollu, 2020)**.

Thrombolysis is the first line of treatment in hyperacute ischemic stroke. TPA is the only agent approved by the

European Medicines Evaluation Agency (EMEA) since 2002 for acute ischemic stroke within 3 h of stroke onset according to the benefits observed in multicenter clinical trials in North America and Europe. The time window was extended to 4.5 h in light of the benefits observed in the European Cooperative Acute Stroke Study III (ECASS III) trial **(Modrego, 2019)**.

Not everyone who has an ischemic stroke is eligible for TPA. The use of TPA has very strict inclusion criteria. General inclusion criteria as; patient age should be equal or older than 16 years with the presence of acute ischemic stroke symptoms, measurable neuromuscular failure should be present, Absence of hemorrhage or stroke mimic on baseline CT, and the onset of symptoms should be at least 4.5 hours before the onset of treatment **(Douglass, 2019)**.

Despite the efficacy of TPA drug in improving ischemic stroke patients' outcome, the most significant adverse effect of TPA is intracerebral hemorrhage and the other adverse effects include extracranial hemorrhage, orolingual angioedema, and seizure. The risk of TPA therapy and the need for rapid interventions make it is clear that the nursing role during this time is crucial **(Jilani & Siddiqui, 2020)**.

The main target of the stroke nurse is continuous monitoring of the patient who is receiving TPA drug. The nurse should be a good observer for any signs of major or minor bleeding, any changes in neurological status, signs of orolingual angioedema, or any signs of SICH occur, such as severe headache, acute hypertension, nausea or vomiting, or worsening neurological examination. The TPA administration should be stopped and a CT scan obtained **(Ignatavicius, Workman, Rebar & Heimgartner, 2020)**.

Nurses should be familiar with the safe dosage and administration of TPA for stroke, which is clearly different than the administration of TPA for myocardial infarction. Furthermore, thrombolytic stroke treatment must be accompanied by intensive neurological monitoring to observe for complications. Intracerebral hemorrhage is usually accompanied by an acute change in neurological status and vital sign instability. Intensive monitoring of the neurologic condition, vital signs, cardiac status, and other standard critical care practices must be initiated immediately to optimize patient outcomes **(Williams, Perry &Watkins, 2020)**.