Tissue Plasminogen Activator and Stroke Recurrence: An Integrative Literature Review

Leann Podskalan
leannherrmann92@gmail.com

Follow this and additional works at: https://via.library.depaul.edu/nursing-colloquium

Part of the Nursing Commons


This Event is brought to you for free and open access by the School of Nursing at Via Sapientiae. It has been accepted for inclusion in Grace Peterson Nursing Research Colloquium by an authorized administrator of Via Sapientiae. For more information, please contact digitalservices@depaul.edu.
Tissue Plasminogen Activator and Stroke Recurrence: An Integrative Literature Review

Leann Podskalan, Master of Science in Nursing
DePaul University School of Nursing

Purpose
The purpose behind this integrative literature review is to investigate the potential for recurrence of future ischemic strokes in the case of patients experiencing an acute ischemic stroke that receive t-PA within the 3 to 4.5 hour administration window following acute onset of symptoms.

This research aims to provide further understanding of current ischemic stroke research and the future of thrombolytic therapy in treating patients experiencing acute ischemic stroke.

Background
One in twenty individuals in the United States are killed from stroke every year. Stroke is rated the number five cause of death in the United States. Cerebrovascular accidents (CVAs) are classified as either ischemic or hemorrhagic and 87% of strokes are ischemic in nature.

In 1995, the National Institute of Neurological Disease and Stroke (NINDS) began a revolutionary turning point in the treatment and outcomes of ischemic stroke due to the development of intravenous recombinant tissue plasminogen activator (t-PA). Results from the NINDS trial concluded that treatment for ischemic stroke can be achieved with the use of t-PA, resulting in an improved clinical outcome for patients experiencing acute ischemic stroke.

Research Question
Tissue plasminogen activator (t-PA) is considered the gold standard for treatment of acute ischemic stroke. When t-PA is administered within 3 to 4.5 hours of symptom onset, it is observed to reduce the compromising long-term effects significantly.

Does the use of t-PA aid in preventing recurrence of future ischemic strokes in patients actively experiencing an acute ischemic stroke?

Methodology
Integrative literature reviews examine the topic of choice, critique the topic, and synthesize the information reviewed. This method is the design of choice because it appropriately addresses current research on the use of t-PA for prevention of recurrent ischemic strokes in patients experiencing an acute ischemic stroke in an orderly fashion.

The research is processed among different frameworks to see if new information or ideas can be discovered.

The conceptual framework used for this integrative literature review is based off and relative to Ida Jean Orlando’s 1961 Nursing Process Discipline Theory.

The patient experiencing an acute ischemic stroke would be the identified problem. It is up to the nurse to utilize the nursing process (assessment, diagnosis, planning, implementation, evaluation) in order to produce the best outcomes for the patient. The primary intervention addressed for this research is t-PA administration.

Findings
The outcome of this integrative literature review has shed light on the topic of t-PA administration and recurrence of acute ischemic stroke, perhaps in not directly answering the research question, but with potential to explore new routes for further research where there may be a gap in knowledge.

After completing the review of literature, only one study out of the ten studies meeting the inclusion criteria addressed the research question. However, the study indicated that there was no difference in stroke recurrence after t-PA administration post acute ischemic stroke.

Unfortunately, there was lack of evidence suggesting that t-PA administration may aid in preventing recurrence of stroke because there are so few instances that recurrent acute ischemic stroke actually happens on more than one occasion.

Nursing Implications
Nursing practice originates to the concept of patient education on prevention of cardiovascular disease and stroke. The nurse educates the patient on how to make healthy lifestyle choices by monitoring their diet and achieving adequate exercise is the foundation of living a healthy lifestyle.

Administration of t-PA in the event of an acute ischemic stroke significantly improves the patient’s prognosis, recovery, and outcomes in a single treatment when indicated. It has been observed that patients’ ineligibility for thrombolytic therapy have poorer recovery outcomes and higher incidence of mortality.

To perhaps propose a future research question, an interesting topic could investigate the incidence of intracranial hemorrhage following administration of t-PA and observing patient outcomes and recovery.

Acknowledgements
Special thanks to Dr. Christina Lattner, DNP, Ed., APRN, AGNP-C, ANP-BC, for inspiring interest in this topic and providing guidance as a research advisor.