

Nursing care in patient non-stroke hemorrhagic in dr. Suhardi Hardjolukito hospital

Yani Nurbaiti*, Wawan Febri Ramdani

Study Program of Nursing, Faculty of Health Sciences, Universitas Aisyiyah Yogyakarta, Indonesia

*Email: yaninurbaiti4@gmail.com

Abstract

Non-hemorrhagic stroke occurs when blood vessels are blocked. It causes reduced blood flow to brain tissue, cerebral thrombosis, atherosclerosis, and cerebral embolism. It happens due to plaque formation, resulting in narrowing of blood vessels related to coronary heart disease, diabetes mellitus, obesity, excessive cholesterol, smoking, stress, lifestyle, damage or destruction of upper motor neurons, and hypertension. The objective of the study is to provide and implement nursing care for non-hemorrhagic stroke patients in the IGD (Emergency Room) of RSPAU (Air Force Central Hospital) Hardjolukito. This research method is a case report using a nursing process approach to 1 (one) patient with a diagnosis of non-hemorrhagic stroke. The results of this study in non-hemorrhagic stroke patients obtained 3 nursing diagnoses, namely the risk of ineffective cerebral perfusion, the risk of decreased cardiac output, and impaired physical mobility; which after being implemented the nursing care, the three problems had not been resolved. Non-hemorrhagic stroke occurs when blood vessels are blocked. It causes reduced blood flow to brain tissue, cerebral thrombosis, atherosclerosis, and cerebral embolism. It happens due to plaque formation, resulting in narrowing of blood vessels related to coronary heart disease, diabetes mellitus, obesity, excessive cholesterol, smoking, stress, lifestyle, damage or destruction of upper motor neurons, and hypertension.

Keywords: non-hemorrhagic stroke

1. Introduction

Stroke is a significant and pressing issue in Indonesia. Strokes are caused by a disruption in the blood supply to the brain. This disruption is generally caused by the rupture or blockage of a blood vessel in the brain by a blood clot (Mauliddiyah et al., 2022).

Based on pathological abnormalities, strokes are classified into 2, namely non-hemorrhagic strokes (blood clots) and hemorrhagic strokes (rupture of blood vessels). Non-hemorrhagic strokes occur in blood vessels that experience blockages, causing reduced blood flow to brain tissue, cerebral thrombosis, atherosclerosis and cerebral embolism which is a blockage of blood vessels that occurs due to plaque formation resulting in narrowing of blood vessels caused by coronary heart disease, diabetes mellitus, obesity, excess cholesterol, smoking, stress, lifestyle, damage or destruction of upper motor neurons and hypertension (Tala et al., 2024).

Non-hemorrhagic stroke can cause problems, one of which can lead to death is impaired cerebral perfusion. This occurs due to an infarct stimulus in the left lateral periventricular, frontal lobe, with cerebral occlusion (Ros & Simanungkalit, 2024). Management of intracranial pressure (ICP) can generally be done by positioning the patient at 30° and administering oxygen. Emergency management for stroke patients includes controlling increased ICP by providing a head-up position. Positioning the head elevated 30 degrees aims to reduce ICP. If the elevation is higher than 30 degrees, cerebral perfusion pressure will decrease.(Hasan, 2018)

Impaired oxygen supply to the brain causes serious health problems because it can lead to hemiparesis and even death. Stroke is the third most common cause of death after coronary heart disease and cancer. Fifteen people worldwide suffer strokes each year, five million die, and another five million are left disabled. Hemiparesis is a clinical syndrome that occurs suddenly and rapidly due to non-traumatic cerebral circulatory disorders, in the form of focal neurological deficits that last 24 hours or more or directly cause death. Hemiparesis is a complication that occurs in 70-80% of stroke patients. Meanwhile, impaired physical mobility is a condition where a person cannot move freely due to conditions that interfere with movement.(Fawwaz et al., 2023).

Based on the background described above, the researcher is interested in writing a description of nursing care for non-hemorrhagic stroke patients with the risk of ineffective cerebral perfusion, the risk

of decreased cardiac output and impaired physical mobility in the Emergency Room of Hardjolukito RSPAU.

2. Method

This case study design uses a case report, which describes the basic nursing care provided to the patient through assessment, diagnosis formulation, intervention, implementation, and evaluation. This case report approach was implemented on a non-hemorrhagic stroke patient with a risk of ineffective cerebral perfusion, a risk of decreased cardiac output, and impaired physical mobility. The location of care was the Emergency Department of Dr. S. Hardjolukito Air Force Hospital on February 4, 2025.

3. Results and Discussion

3.1. Results

3.1.1. Case Overview

The results of the assessment found that the patient with the initials Mrs. P, aged 57 years, address Ngablak, Sitimulyo, Piyungan. Mrs. P's family said the patient's limbs could not be moved, especially the right side and speech began to be slurred after falling in front of the house last night at 23.00. The patient came to the Emergency Room at 08.00 with vital sign results BP: 212/101 mmHg, N: 98 x / min, RR: 20 x / min, S: 36.8°C, SPO₂: 97% on NK 3 lpm. The results of the patient's anamnesis have a history of uncontrolled hypertension since 10 years ago. Airway: No secretions, no foreign objects. No rhonchi sounds. Breathing is felt. Patent airway conditions. Breathing: Spontaneous breathing is assisted using oxygen with a nasal cannula at 3 lpm, symmetrical chest movement. Respiratory rate: 20 x/minute and no additional breath sounds. Circulation: No bleeding is seen, consciousness: composmentis. Heart sounds S1 and S2 are normal. Normal skin, warm acral, strong pulse, no enlarged thyroid gland in the neck. Pulse 98 x/minute. CRT: <2 seconds. Disability: Level of consciousness with GCS E: 4, V: 4, M: 5 Score: 12, Isocor pupil, Right = 3 mm and left = 3 mm, Light reflex: right and left positive, No decrease in consciousness, AEIOU: Alcohol and drugs: The patient does not consume alcohol, Endocrine, encephalopathy: The patient has no problems with the endocrine system, Insulin: The patient does not consume or use insulin, Opiates and oxygen: The patient uses oxygen 3lpm, Uremia: The patient does not have routine hemodialysis therapy.

Table 1. Laboratory and Radiology Results (February 4, 2025)

| Name of examination | Results | Unit | Reference Value |
|-----------------------------|---------|-------------------------|-------------------|
| Complete Blood Count | | | |
| Hemoglobin | 14.7 | g/dL | 11.7 – 15.5 |
| Leukocytes | 12320 | /mm ³ | 3600 – 11000 |
| Hematocrit | 45.6 | % | 35 – 47 |
| Erythrocytes | 5.08 | million/mm ³ | 3.70 – 5.40 |
| Platelets | 391000 | /mm ³ | 150,000 – 440,000 |
| Erythrocyte Index | | | |
| MCV | 89.8 | fL | 80 – 100 |
| MCH | 28.9 | pg | 26.0 – 34.0 |
| MCHC | 32.2 | g/dL | 32 – 36 |
| Leukocyte Type Count | | | |
| Eosinophils | 1 | % | 2 – 4 |
| Basophils | 1 | % | 0 – 1 |
| Rod Neutrophils | 0 | % | 3 – 5 |
| Neutrophil Segment | 70 | % | 50 – 70 |
| Lymphocytes | 22 | % | 25 – 40 |
| Monocytes | 6 | % | 2 – 8 |
| Carbohydrate | | | |
| Random Blood Glucose | 206 | mg/dL | < 200 |
| Liver Function | | | |
| SGOT | 35 | U/L | < 31 |
| SGPT | 23 | U/L | < 34 |
| Kidney Function | | | |
| urea | 29 | mg/dL | 21 – 43 |

| Name of examination | Results | Unit | Reference Value |
|-----------------------------------|--|-------------|------------------------|
| Creatinine | 0.98 | mg/dL | 0.6 – 1.1 |
| Electron | | | |
| Sodium (Na) | 141.24 | mmol/L | 135.0 – 147.0 |
| Name of examination | Results | Unit | Reference Value |
| Potassium (K) | 3.41 | mmol/L | 3.5 – 5.5 |
| Chloride (Cl) | 105.65 | mmol/L | 95.0– 105.0 |
| Head MSCT Scan Examination | <ul style="list-style-type: none"> - No extracranial soft tissue swelling is visible. - Gyri, sulci and fissura sylvii are not prominent - The boundary between the cortex and medulla is sharp. - Bilateral hypodense frontal lesions are visible, globus pallidus right density 20 HU - The ventricular and cistern systems are neither wide nor narrow. - Midline in the middle without deviation - SPN and air celullae mastoidea normodense Impression: Acute frontal infarction stroke bilateral globus pallidus dextra | | |
| Thorax RO Examination | <ul style="list-style-type: none"> - Suboptimal photos (lack of inspiration) - Cor: impression of enlargement, aortic knob classification of aortic dilatation - Pulmonary: no visible infiltrates in both lung fields, normal bronchovascular pattern - Right and left phrenicocostal sinuses are sharp - Right and left diaphragms are normal - Good bone system - Impression: Cardiomegaly accompanied by aortosclerosis and HHD configuration | | |
| ECG examination | Sinus rhythm | | |

Source: Primary Data (2025)

3.1.2. Nursing Diagnosis and Implementation

Non-hemorrhagic stroke will give rise to several nursing diagnoses such as the risk of ineffective cerebral perfusion, the risk of decreased cardiac output and impaired physical mobility. In this case, the first nursing diagnosis is the risk of ineffective cerebral perfusion as evidenced by hypertension. This is based on objective data (DO): BP: 212/101 mmHg, N: 98 x/min, RR: 20 x/min, S: 36.8°C, SPO₂: 98% with NK 3 lpm. It is expected that after nursing actions for 1 x 5 hours, cerebral perfusion will increase with the following outcome criteria: decreased ICP, improved consciousness, improved blood pressure values. The nursing actions carried out are Management of Increased Intracranial Pressure including: monitoring the level of consciousness, monitoring vital signs, monitoring respiratory status, minimizing stimuli by providing a quiet environment, administering oxygen and a semi-Fowler position. Nursing evaluation of the results of the implementation of nursing actions that have been carried out on the nursing problem of ineffective cerebral perfusion risk includes: S: -, O: BP: 180/82 mmHg, N: 107 x/min, RR: 20 x/min, S: 36.7°C, SPO₂: 98% with NK 3 lpm, the patient's sleeping position is semi-Fowler, the level of consciousness is composmentis, A: The risk of ineffective cerebral perfusion has not been resolved, P: Continue intervention in the Inap ward, namely monitoring vital signs.

The second nursing diagnosis is the risk of decreased cardiac output. This is based on objective data (DO): Blood pressure increases. It is expected that after nursing actions for 1 x 5 hours, cardiac output can increase with the outcome criteria: Blood pressure improves. Nursing actions taken are: Cardiac care includes: monitoring blood pressure, positioning semi-fowler and collaboration in administering medication. The second nursing diagnosis evaluation from the results of the implementation of nursing actions that have been carried out on the nursing problem of risk of decreased cardiac output includes: S: The family says blood pressure is still fluctuating, O: Blood pressure is fluctuating and still above 140/90 mmHg, A: The risk of decreased cardiac output has not been resolved, P: Continue intervention in the inpatient room.

The third nursing diagnosis is impaired physical mobility. This is based on objective data (DO): Muscle strength of the right extremity is 1 and left extremity is 4, the patient looks restless, the patient's movements are limited. Subjective data (DS): The family said the patient's limbs cannot be moved, especially the right side and his speech is starting to become slurred after falling in front of the house last night at 23.00. It is expected that after nursing actions for 1 x 5 hours, physical mobilization can improve with the following outcome criteria: increased extremity movement, increased range of motion (ROM). The nursing actions carried out are: Ambulation support includes: monitoring general conditions in improving ambulation, taking a therapeutic approach to build client trust. The evaluation of the third nursing diagnosis from the results of the implementation of nursing actions that have been carried out on the problem of nursing physical mobility disorders includes: S: The family said the left extremity is normal but the right one still cannot be moved, O: muscle strength of the right extremity is 1 and left extremity is 5, the patient looks restless, an NGT is installed, a size 20 catheter is installed, A: Impaired physical mobility has not been resolved, P: Continue intervention in the inpatient room.

Table 2. Administration of medication

| No | Drug Name | Dose | Hours of Giving |
|----|-----------------------|-------------------|-----------------|
| 1. | NaCl 0.9% | 20 toms | 09.00 |
| 2. | Mecobalamin Injection | 1 ampoule | 09.00 |
| 3. | Captopril 25 mg | 1 tab | 09.00 |
| 4. | Nicardipine | 4.8 cc/hour | 10.17 |
| | Nicardipine | 9.6 cc/hour | 10.35 |
| | Nicardipine | 12 cc/hour | 10.50 |
| | Nicardipine | 16.8 cc/hour | 11.10 |
| | Nicardipine | 24 cc/hour | 12.13 |
| | Nicardipine | 2.4 cc/hour | 13.00 |
| | 5. | Clopidogrel 75 mg | 4 tab |

Source: Primary Data (2025)

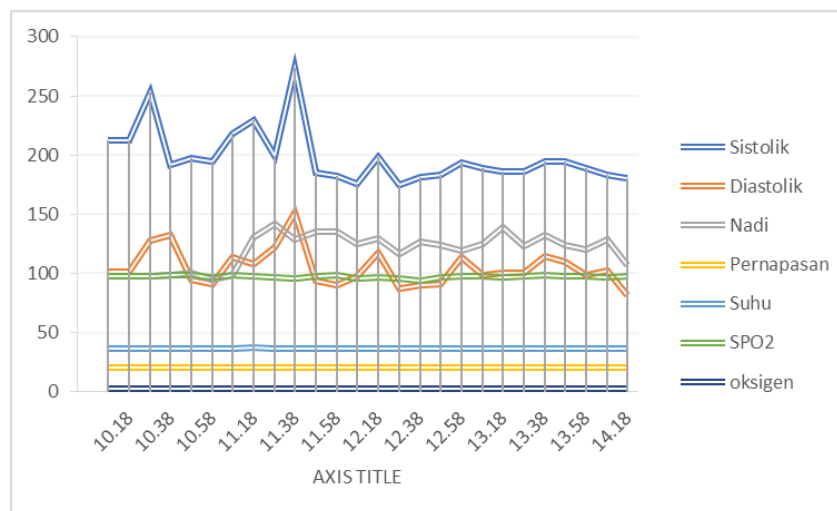


Figure 1. Vital Signs Monitoring Results

3.2. Discussion

In non-hemorrhagic stroke patients, they experience facial or limb paralysis on one side, hemiparesis, changes in mental status, aphasia, dysarthria, visual disturbances, atasia, vertigo, nausea and vomiting or headaches. (Darmawan et al., 2023) The subjects of this study experienced several complaints similar to those above, namely weakness in the extremities, especially on the right side, and slurred speech. In non-hemorrhagic stroke patients, the risk of ineffective cerebral perfusion can be managed by positioning the patient in a semi-Fowler position and administering oxygen. The semi-Fowler position is a position where the patient lies down in a half-sitting position, with a backrest angle between 30 and

45 degrees. Providing a stroke patient with a 30-degree head-up position can improve hemodynamics by increasing cerebral blood flow and maximizing brain tissue oxygenation. (Mustikarani & Mustofa, 2020). The application of oxygen therapy shows an increase in consciousness and oxygen saturation and there is a decrease in blood pressure, respiration rate, and pulse after the implementation of oxygen administration (Salasati et al., 2024). The results of the patient's evaluation still experience an increase in blood pressure. However, the patient's consciousness is good/compos mentis. The problem has not been resolved and interventions must be continued, namely ICP Management, Neurological Monitoring, and Drug Administration.

In patients at risk of decreased cardiac output, management can be carried out by monitoring blood pressure, providing a semi-Fowler's position, and collaborative drug administration. Monitoring blood pressure Collaboration of administering NaCl 0.9%, Mecobalamin, Captopril, Nicardipine, and Copidogrel. The management received by the patient is collaborative administration of Nicardipine intravenous therapy with a syringe-pump of 4.8 cc/hour. Nicardipine is a safe and effective drug for controlling blood pressure in hypertensive patients with the advantage of having regional selectivity in cerebrovascular smooth muscle with the possibility of parenteral administration. Nicardipine can trigger reflex tachycardia. (Martinova & Panggabean, 2023) Then the patient received additional collaboration of oral anti-hypertensive drug therapy, namely Captopril 1 x 25 mg. Captopril is an ACE inhibitor that is widely used in clinics for the treatment of hypertension and heart failure. Side effects of 5-finger exercise theory, dry cough, hypotension. Dizziness, renal dysfunction. Hyperkalemia (Kristanti, n.d.) The importance of rapid blood pressure control in this situation, close monitoring of vital signs and adjustment of the dose of antihypertensive therapy is also carried out to ensure a safe and effective reduction in blood pressure. (Kinanti et al., 2024). The results of the evaluation obtained in the patient after treatment for 5 hours were that the patient's blood pressure was still fluctuating. Therefore, the problem has not been resolved and intervention must be continued, namely collaboration of drug administration and blood pressure monitoring.

In stroke patients with impaired physical mobility, it can be managed with ROM (Range of Motion) training. Movement exercises accelerate the healing of stroke patients, because they can affect the sensation of movement in the brain, the basic principles of ROM exercises include ROM being done at least 2 times a day, ROM being done slowly and carefully so that the patient does not feel weak, in doing ROM pay attention to the patient's age, diagnosis, vital signs, and length of bed rest. The parts of the body that can be done ROM are the neck, fingers, arms, elbows, shoulders, heels, feet, and ankles (Fawwaz et al., 2023). The results of the evaluation obtained on the patient after 5 hours of treatment were that the patient still experienced decreased muscle strength, physical weakness, and the patient's family said they still needed other people to help with activities. With that, the problem has not been resolved and intervention must be continued, namely Range of Motion Exercises.

4. Conclusion

Non-hemorrhagic stroke occurs in blood vessels that experience blockages, causing reduced blood flow to brain tissue, cerebral thrombosis, atherosclerosis and cerebral embolism which are blockages of blood vessels that arise due to plaque formation resulting in narrowing of the blood vessels caused by heart disease, diabetes, obesity, cholesterol, smoking, stress, lifestyle, damage or destruction of upper motor neurons and hypertension . In the case above, 3 nursing diagnoses emerged, namely the risk of ineffective cerebral perfusion and impaired physical mobility. The results of the evaluation carried out for 5 hours of the risk of ineffective cerebral perfusion with risk factors for hypertension indicate that the problem has not been resolved, the risk of decreased cardiac output with risk factors for changes in afterload indicates that the problem has not been resolved and impaired physical mobility related to decreased muscle strength indicates that the problem has not been resolved.

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