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Application of 30 Degree Head Up Position in Non-Hemorrhagic Stroke Patients in Improving Oxygen Saturation in the Stroke Unit Room of the Gunung Jati Hospital Cirebon

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ABSTRACT

Stroke is a cerebrovascular disease that can occur suddenly and is an emergency condition, this is due to blockage of blood vessels in the brain, resulting in a lack of oxygen supply in the blood, to the brain. The purpose of the study was to determine the effect of the head up position of 30 degrees on increasing oxygen saturation in stroke patients. The method uses a qualitative approach with case studies as the main method. Data collected through interviews, documentation, data analysis up to the provision of intervention and evaluation. The research was conducted in the Stroke Unit Room of Gunung Jati Hospital, Cirebon City in March 2024. The sample in this study was one patient with stroke, with the provision of 30 degree head up intervention carried out for 30 minutes. The results of the study were obtained for 3 consecutive days, namely oxygen saturation experienced significant changes before and after the provision of oxygenation therapy and head up 30 degrees to 98%. In conclusion, the head up position can significantly improve oxygen saturation

INTRODUCTION

Stroke is a cerebrovascular disease that can occur suddenly and is an emergency condition, this is due to blockage of blood vessels in the brain, resulting in a lack of oxygen supply in the blood to the brain, and can cause brain tissue damage, disability, and death if not treated properly. Stroke is divided into two, namely hemorrhagic stroke and non-hemorrhagic stroke. It has been estimated that non-hemorrhagic (ischemic) stroke accounts for 85% of the number of strokes that occur (Kiswanto & Chayati, 2021). Stroke is a disorder that occurs suddenly in brain function due to the cessation of blood supply. The American Heart Association explains that stroke is a clinical syndrome characterized by acute loss of brain function and results in death (Lindsay et al., 2019). Broadly speaking, stroke is divided into two categories, namely nonhemorrhagic stroke or commonly referred to as ischemic stroke and hemorrhagic stroke. Ischemic stroke is a blockage of blood vessels that causes blood flow to part of the brain or the whole to stop and hemorrhagic stroke is a stroke caused by rupture of blood vessels in the brain (Los, 2019).

Stroke is the third cause of death in the world after coronary heart disease and cancer in both developed and developing countries. Indonesia is the country in Southeast Asia with the most stroke patients, and it is known that the death rate from stroke is the highest in Southeast Asia, followed by the Philippines, Singapore, Brunei, Malaysia, and Thailand (Budi Pertami et al., 2019). Based on Indonesian national data, the incidence of stroke in Indonesia has continued to increase since five years starting from 2013, which is 9% and increased to 15.4% in 2018, with around 750,000 stroke incidents per year in Indonesia, 200,000 of which are recurrent strokes. The province with the highest prevalence is East Kalimantan with 15%, while Papua province has the least at 4.1% followed by Central Java province at 3.8% (Ministry of Health R1, 2019).

The main symptom of non-hemorrhagic stroke is the sudden onset of neurological deficits, usually preceded by prodromal symptoms and usually occurs at rest or after waking up in the morning and consciousness is not usually decreased, unless the embolus is large enough. The neurological symptoms that arise usually depend on the severity or mildness of the vascular disruption at each location. Poor blood flow in stroke patients results in hemodynamic disturbances including oxygen saturation. Therefore, proper monitoring and treatment is required to increase oxygen in patients.

Management of non-haemorrhagic stroke patients is divided into two, pharmacological and non-pharmacological. The application of interventions in stroke patients to help increase blood flow to the brain and maximize the course of oxygenation to the brain such as semi fowler, high fowler, or head elevation position as a nursing intervention that affects the gas exchange process in the body (Kiswanto & Chayati, 2021). And research conducted by YaDeau et al (2019), namely the provision of head up position is very beneficial in hemodynamic changes by facilitating blood flow to the brain and increasing cerebral oxygenation.

Giving the head up position is a non-pharmacological management that can be done in the initial treatment of stroke patients. Head Up therapy is a position to raise the head from the bed at an angle of about 30 degrees and the position of the body in a parallel state (Zakiya, 2023). This is in line with research conducted by Ekacahyaningtyas (2017) that the Head Up Position can increase blood flow in the brain and maximize the oxygenation of cerebral tissue in patients with CVA Bleeding.

Based on the above background, the researcher aims to determine the effect of the head up 30 degree position on increasing oxygen saturation in stroke patients. Therefore, the researcher conducted a case study with the title "Application of the 30-degree Head Up Position in Non-Hemorrhagic Stroke Patients in Increasing Oxygen Saturation in the Stroke Room of the Gunung Jati Hospital Unit, Cirebon City".

METHODS

The method uses a qualitative approach with case studies as the main method. Data collected through interviews, documentation, data analysis up to the provision of interventions and evaluation. The research was conducted in the Stroke Unit Room of Gunung Jati Hospital, Cirebon City in March 2024. The sample in this study was one patient with stroke, with the provision of 30 degree head up intervention carried out for 30 minutes. The case study process that researchers will carry out is after the history and examination process, then later researchers will evaluate and check the patient's oxygen saturation again. The subjects in this case study are clients who meet the inclusion and exclusion criteria. The observation instrument that will be used in the implementation of this observation is that the researcher is directly involved, which is called participant observation.

RESULTS AND DISCUSSION

The results obtained in the case study in March 2024 were that the patient Mr. R was 65 years old with a diagnosis of non-hemorrhagic stroke. The patient has a history of mild stroke, heart disease and pinched nerves > 5 years. General condition appeared restless with GCS (E: 3 M: 5 V: 2) the patient's consciousness decreased, the skin appeared pale. Vital signs of the patient, blood pressure 150/100 mmHg, pulse 115x/min, temperature 36 °C, respiration 22x/min, Spo2 90%.

Based on Mr. R laboratory results R obtained pH 7.332 (7.350-7.450), PO₂ 28.2 * mmHg (75-100 mmhg), B_{ee}cf -5.4 mmol / l ((-2) - (+2) mmol / l), HCO₃ 20.5 mmol / l (22-26 mmol / l), Oxygen saturation 60.4% (>95%). According to Martina et al in the research of Rachmawati et al (2022) a decrease in oxygen levels in the body or hypoxia is often experienced by stroke patients, this is due to poor blood flow in stroke patients resulting

in hemodynamic disorders including oxygen saturation. Oxygen saturation is the percentage of oxygen that has joined the hemoglobin molecule where oxygen joins hemoglobin in sufficient quantities to meet the body's needs, at the same time oxygen is released to meet tissue needs. The picture of oxygen saturation can determine the adequacy of oxygen in the body so that it can help in determining further therapy (Rachmawati et al., 2022).

Nursing diagnoses obtained based on data analysis in accordance with the SDKI are gas exchange disorders associated with ventilation-perfusion imbalance d.d PO₂ decreases, arterial pH decreases, restlessness, pale skin color, decreased awareness. The interventions carried out are the provision of oxygen therapy and adjusting the head up position of 30 degrees. Nursing implementation on Mr. R for 3 consecutive days as follows: (1) monitor oxygen flow periodically and ensure the fraction given is sufficient, (2) collaborate on oxygen administration, (3) adjust the head up position of 30 degrees to increase oxygen saturation. The evaluation obtained for 3 consecutive days is that oxygen saturation has changed significantly before and after the provision of oxygenation therapy and the head up position of 30 degrees to 98%. In line with Yoku's research (2023) based on his research on the application of a 30-degree head up position in increasing oxygen saturation in non-hemorrhagic stroke patients better than the supination position.

CONCLUSION

The results of this study can be concluded that non-hemorrhagic stroke patients with nursing diagnoses of gas exchange disorders and given oxygenation therapy and 30 degree head up position can increase oxygen saturation from 90% to 98%.

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