CASE REPORT

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Acute thromboembolic ischemic stroke in rural hospital, the role of early treatment in reducing brain damage

Munzirul Akbar[1], Yopie Afriandi Habibie[2*], Mursyida[3]

[1]General Practioner, Langsa City General Hospital, Langsa, Aceh Indonesia;
[2]Division of Thoracic Cardiac and Vascular Surgery, Department of Surgery, Faculty of Medicine Universitas Syiah Kuala, the Zainoel Abidin general Hospital, Banda Aceh, Indonesia;
[3]Neurologist, Great Aceh Besar General Hospital, Aceh Indonesia.

*Corresponding author:
Yopie Afriandi Habibie,
Division of Thoracic Cardiac and Vascular Surgery, Department of Surgery, Faculty of Medicine Universitas Syiah Kuala, the Zainoel Abidin General Hospital, Banda Aceh, Indonesia;
yopie@unsyiah.ac.id

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ABSTRACT

Introduction: Stroke has a high mortality and disability rate, and the main cause of physical disability in productive age and elderly. In developed countries stroke is the number one cause of admission of patients to hospital, with a mortality proportion of 20% within the first 28 days of treatment.

Case Report: A 45-year-old man came to the neurology polyclinic of RSUD Aceh Besar on March 21st, 2021 with chief complaints of the general weakness of the left limb, complete numbness and heavy feeling in the left limb since 4 hours of before admission which is felt to be getting weaker from time to time, happened suddenly when the patient was working collecting stones. He complained of dizziness as well, and did not decrease while resting. After the attack, the patient remains conscious with no headache, no nausea and vomiting, no double images were seen. On Siriraj score showed result of -4. The patient was hospitalized with injection of Citicolin 1000 mg and then discharged 5 days later with significant improvement.

Conclusion: Ischemic Stroke requires fast, precise and accurate handling to prevent and avoid disability and even death. One of the effective efforts is to organize health promotion and preventive programs starting from the First Level Health Facility (FKTP) on an ongoing basis to the community.

Keywords: acute limb weakness, ischemic stroke, rural hospital.
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INTRODUCTION

Stroke has a high mortality and disability rate. Stroke is the main cause of physical disability in productive age and elderly. In developed countries stroke is the number one cause of admission of patients to hospital, with a mortality proportion of 20 % within the first 28 days of treatment.[1] According to the World Stroke Organization, 1 in 6 people in the world will experience a stroke in their lifetime, while data from the American Health Association (AHA) states that every 40 seconds there is 1 new case of stroke with a prevalence of 795,000 new or recurring stroke patients every year and approximately every 4 minutes there is 1 stroke patient dies. The death rate from stroke is 1 in 20 deaths in the United States.[2] By definition Stroke is a "brain functional disorder" that occurs suddenly with focal or global clinical signs that last more than 24 hours (unless there is action from surgery or death) without signs of a non-vascular cause, including signs of subarachnoid hemorrhage, intracerebral hemorrhage, ischemia or cerebral infarction.[3]

The prevalence of stroke varies in different parts of the world. The prevalence of stroke in the United States is about 7 million (3.0%), while in China the prevalence of stroke ranges between 1.8% (rural) and 9.4% (urban). Worldwide, China is a country with a fairly high death rate from stroke (19.9% of all deaths in China), along with Africa and North America. The incidence of stroke worldwide is 15 million people each year, one-third of whom die and one-third have permanent disability. Around 795,000 new or recurrent stroke patients occur each year. About 610,000 were the first attacks and 185,000 were repeated attacks. The death rate from stroke is 1 per 18 deaths in the United States. Over a period of 5 years, more than half of stroke patients aged> 45 years will die.[2,4,5]

Based on Basic Health Research data Rikesda (2013), The highest prevalence of stroke based on diagnosed health professionals and symptoms was in South Sulawesi (17.9 %), DI Yogyakarta (16.9‰), Central Sulawesi (16.6‰), followed by East Java (16 ‰).[6]

The pathology of stroke is classified as ischemic stroke and hemorrhagic stroke. Ischemic stroke is more common than hemorrhagic stroke. A study conducted by Hsieh et al., In Taiwan on 30,599 stroke patients showed the proportion of ischemic stroke was 74.0% and hemorrhagic stroke was 26.0%.[7] Ischemic stroke or non-hemorrhagic stroke is the death of brain tissue due to impaired blood flow to the brain area, caused by blocked cerebral or cervical arteries or, less likely, the cerebral veins.[8] The ischemic stroke classification that is often used in research to classify ischemic stroke subtypes is the Trial of ORG 10172 in Acute Stroke

Treatment (TOAST) classification, namely (1) atherosclerosis of large blood vessels, (2) cardioembolic, (3) lacunar, (4) causes other, and (5) the cause is unknown.[9-11] Research conducted by Hsieh et al. Showed that stroke with atherosclerosis of large blood vessels (27.7%), lacunar (37.7%), cardioembolic (10.9%), other causes (1.5%) and unknown The cause (22.2%). Ischemic stroke with atherosclerosis of the large vessels and lacunar strokes are the main types of pathology.[7]

CASE REPORT

A 45-year-old male patient came to the neurology polyclinic Aceh Besar Regional Hospital on March 21, 2021 with the chief complaint of general weakness on the left limb 4 hours before admission to the neurology polyclinic of Aceh Besar Regional Hospital. Which is felt to be getting weaker from time to time. Weakness occurred when the patient was working collecting stones, the patient suddenly feels dizzy and numb in the left limb, the patient then did some rest, and feels the left limb getting weaker over time. The patient remains conscious after the attack. No headache, no nausea and vomiting, no double images. Talking pelo there and mouth tilted left there. The patient has been known to suffer from hypertension since the last three years, the patient is routinely treated with a history of using the drug in the form of amlodipine 1x5 mg. The highest blood pressure ever reached 220/110 mmHg.

However, during the last ten days, the patient did not take antihypertensive drugs. History of heart disease is denied, history of diabetes is denied. The patient's father had a history of hypertension. There is no family history of heart disease and diabetes mellitus. The patient is an intercity driver with moderate-strenuous physical activity. The patient is a smoker for ± 30 years. The number of stems that can be sucked a day is one to two boxes per day. From laboratory result found Hb 15.9 mg/dl, Leukocytes 11.100, Ht 45%, Platelets 203.000 with HDL 45 (low), LDL 69 (normal), Triglycerides 100 (normal), Total Cholesterol 153 (normal), GDR 110 mg / dl (normal), Ureum/Creatinine: 29 / 1,2.

We performed analysis with Gajah Mada Score : ↓ Awareness (-), Headache (-), Babinsky Reflex (+), that showed Acute Ischemic Stroke, with Siriraj Score: (2.5 x consciousness) + (2 x vomiting) + (2 x headache) + (0.1 x diastole) - (3 x atheroma marker) - 12: (2.5 x 0) + (2 x 0) + (2 x 0) + (0.1 x 110) - (3 x 1) -12: 0 + 0 + 0 + 11 - 3 - 12 = -4, that also showed Acute Ischemic Stroke. From ECG result revealed a sinus tachycardia HR 107 x / i P Wave 0.08 PR Interval 0.12 QRS 0.08 ST Charge (-) T Inverted in leads II, V4, V5, V6 SV1 + RV5 <35, with conclusion of sinus tachycardia with myocardial ischemic on the lateral heart.

We planned to perform full laboratory examination for furhter diagnostic procedures, chest X-ray, and non-contrast head CT-Scan. We conclude this patient for clinical diagnosis is left hemiparesis, Parase left N. VII central type and Parase left N XII. For topical diagnosis as Cerebral Cortex and etiology diagnosis was Thromboembolism.

DISCUSSION

Attacks for any type of stroke will produce neurological deficits of an acute nature. Stroke signs and symptoms such as motor hemideficits, sensory hemideficits, decreased consciousness, paralysis of the VII (facial) nerves and the XII (hypoglossal) nerves which are central, aphasia and dementia, hemianopsia, brainstem deficits. In this study, family history was also analyzed based on the classification of ischemic stroke subtypes (Trial of ORG classification 10172 in Acute Stroke Treatment (TOAST), namely atherosclerosis of large blood vessels (OR: 1.88; 95% CI, 1.02-3.44)., lacunar (OR 1.79; 95% CI, 1.13-2.84), and no known cause (OR: 1.70; 95% CI, 1.13-2.56), but not cardioembolic.[13] Modifiable risk factors Hypertension, smoking, dyslipidemia, diabetes mellitus, obesity, alcohol and atrial fibrillation are modifiable risk factors.[12,14]

As seen in our patient from physical examination of cooperative fully alert, there was no meningeal stimulation and increased intracanal pressure. On + / + light reflex, corneal reflex + / +. On the N VII examination the left nasolabial plica is flat compared to the right, inflating the cheek weakly on the left. N XII examination revealed tongue deviation to the left. On physical examination, there was a left hemiparesis with 233 hand and 122 leg strength. Pain stimulation (+), physiological reflexes were within normal limits and there was a pathological reflex in the form of Babinski + on the left leg. This indicates the presence of UMN lesions that are more especially in the cerebral cortex area. Blood laboratory tests were found to be within normal limits except for a slightly low high density lipoprotein value. The EKG revealed sinus tachycardia and the presence of myocardial ischemia in leads II, V4, V5, and V6, namely on the lateral part of the heart. Based on the Gajah Mada score assessment and the Siriraj score calculation, the value was -4 which indicates an ischemic stroke.

How to distinguish the type of stroke pathology can be performed a neuroimaging examination (head CT scan or MRI). Stroke with large lesions, for example in the cortical area or basal ganglia, abnormal CT scan images of the head will appear after 1-3 hours. Head CT scan is performed within the first 24 hours of admission to the hospital.[8,15] The diagnosis of acute stroke can be made more quickly and accurately by using a recent MRI (higher resolution, appearance of abnormal images faster, and can assess lesions). in the brain stem).

This patient was diagnosed with left hemiparesis + N VII and left XII central type nerve palsy. The possibility of the location of the lesion cannot be ascertained because the patient has not had a Brain CT Scan. Ischemic stroke experienced is supported by existing risk factors, namely a history of hypertension and prolonged smoking. Hypertension and smoking cause damage to blood vessels so that it is easy to form a thrombus (blood clot) which can block blood vessels in the brain.

Ischemic stroke can occur repeatedly. One way to prevent recurrent strokes is by changing your lifestyle, reducing salt, avoiding fatty foods, eating lots of vegetables, fruit and drinking water. In addition, controlling blood pressure is very important to prevent repeated strokes from increasing. The patient was treated with a head elevation of 30°, IVFD NaCl 0.9% 12 hrs/bag. Specific management of injection of Citicolin 1000 mg (IV),

Candesartan 1 x 8 mg (PO), Amlodipine 1 x 5 mg (PO), Aspilet 1 x 80 mg (PO) and Simvastatin 1 x 200 mg (PO). The patient has known hypertension with the highest systolic value of 220. The patient nails routine treatment, but did not take medication for ± 1 week. The patient was admitted with a blood pressure of 220/110 mmHg.

The goal of therapy is to restore perfusion to the infarcted brain tissue and prevent recurrent strokes. Therapy can use Intravenous recombinant tissue plasminogen activator (rtPA) which is evidence of the effectiveness of thrombolysis, antiplatelet drugs and anticoagulants to prevent refusion in ischemic stroke patients.[16] In ischemic stroke, a strong recommendation to be given as soon as possible after the diagnosis of acute ischemic stroke is confirmed is the administration of intravenous thrombolytics after 3 hours of onset, which can provide benefits for ischemic, cardioembolic and lacunar strokes. However, thrombolytic administration has a condition, that is, it should not be given if the blood sugar is <50 mg% or blood pressure > 185/110 mmHg. This patient came to the hospital for more than 3 hours and had a large blood pressure of > 185/110 mmHg, so thrombolytic therapy was not the main choice. However, this patient received only 80 mg of aspilet. If the patient is intolerant to aspirin it can be replaced by using clopidogrel at 75 mg per day or dipyridamole 200 mg twice daily.[8,17]

The next target of therapy in patients with ischemic stroke is blood pressure stabilization. In ischemic stroke, the BP is reduced by 15% (systolic or diastolic) in the first 24 hours if the BP is> 220 mmHg or the TDD is <110 mmHg. Hypertension drugs that can be given are labetalol, nicardipine, and diltiazem in the form of IV.7 However, in this patient the hypertension therapy continued the previous drug alone, namely amlodipine 5 mg plus candesartan 8 mg.

The metabolic activator (citicoline) is thought to bind at the neuronal level to cell membranes, improving neurotransmission. At the vascular level, metabolic activator will increase erythrocyte deformability so that blood flow to the brain increases. In addition, this drug also reduces hyper platelet aggregation and can improve microcirculation.

Prevention, early recognition and treatment of complications after stroke are important aspects. Some of the complications of stroke can occur directly from the stroke itself, immobilization or stroke treatment. This has a major effect on the outcome of stroke patients so that it can hinder the neurological recovery process and increase the length of stay in the hospital. Cardiac complications, pneumonia, venous thromboembolism, fever, post-stroke pain, dysphagia, incontinence, and depression are very common complications in stroke patients.[18]

CONCLUSION

Stroke is the first cause of death and disability in Indonesia. Stroke requires fast, precise and accurate handling to prevent and avoid disability and even death. Stroke can be prevented by controlling risk factors through healthy lifestyle. One of the effective efforts is to organize health promotion and preventive programs starting from the First Level Health Facility (FKTP) on an ongoing basis to the community, considering that there is still very little information on public knowledge regarding risk factors, symptoms and early signs of stroke, so that there are still many people who come. to the hospital was late getting treatment.

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest regarding the manuscript.

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AUTHOR CONTRIBUTION

All authors are contributed equally to the content of the study.

ETHICAL STATEMENT

The informed consent was declared from patient's parent and family regarding the publication in this journal.

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