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A Case Report of a Left-Sided Cerebrovascular Accident with Systemic Hypertension in Elderly Women

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ABSTRACT

Introduction: Most of the time clinicians overlook the diagnosis of cerebrovascular accidents in elderly people. cerebrovascular accident is the most common health problem in India. Three main vessels supply blood to the brain. These vessels are the anterior cerebral artery, middle cerebral artery and posterior cerebral artery

Background: Worldwide, 13.7 million people will experience a hemorrhagic stroke each year. In India, 1.8 million people suffering from a stroke. The incidence of stroke in the general population varies from 154 per 100,000 in India.

Case Presentation: A case of 66-year-old women admitted to the medical intensive care unit on date 3 January 2020 with complaints about the inability to talk and weakness over the right half of the body since 2 days after examining the right-side hemiplegia and blood pressure is high 160/100mmof Hg. She had these complaints about about 2 days.

Interventions: The patient was treated patient was started on intravenous and orally mannitol, ecosprin and analgesia. She is also under the care of the neurologists as his sodium valproate medication had been adjusted. Treatment consisted of hypertension, therapeutic exercise, and neuromuscular re-education.

Conclusion: In this study, we mainly focus on medical management and outstanding nursing care to help prevent further complication. Overall the patient response was good and improvement time after a cerebrovascular accident is different for all people it can take weeks, months, or even years. But few people recover fully, but others have long-term. She takes a long period to recover.

Key Words: Cerebrovascular accident, Elderly women, Hemiplegia, Hypertension, neuromuscular, Therapeutic exercise

INTRODUCTION

Worldwide, 13.7 million people will experience a hemorrhagic stroke each year. In India, 1.8 million people suffering from a stroke. The incidence of stroke in the general population varies from 154 per 100,000 in India.^{1,2} Stroke is the fifth leading cause of death, behind cancer and cardiac disease.³ Approximately, twelve % of all strokes occur below the age of forty-year and slightly more common in males. It is a major cause of mortality and morbidity in the elderly.⁴ Three main vessels supply blood to the brain. These vessels are the

anterior cerebral artery, middle cerebral artery and posterior cerebral artery. In this common long time disabilities add in paralysis, inability to talk, inability to walk and depression.⁵

Alcohol intake reduction, avoidance of cigarette smoking and exercise of these basic strategies and improvements in lifestyle have a higher potential for prevention of stroke.⁶ In cases of acute stroke, the study of the cerebral vasculature is very important for vasculature management. To assess the utility of MRA, Vascular occlusion, flow and severity of collateral stenosis.⁷

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CASE HISTORY

Patient information

A case of 66-year-old women admitted in the medical intensive care unit on date 3 January 2020 with complaints about the inability to talk and weakness over the right half of the body since 2 days after examining right-side hemiplegia and blood pressure is high 160/100mm of Hg. She had these complaints about 2 days.

Medical/Surgical History

The patient has developed the problem of hypertension before 5 yr. After some investigation did the cerebrovascular accident (CVA) presented initially with the inability to talk, right side hemiplegia. She has a history of hypertension, obesity, anaemia, lower extremity oedema. But the patient underwent coronary angiography done before a few days. She has a double vessel coronary artery disease. No past and present surgical history of the patient. A significant medical problem in the timeline refers to in table 1.

Psychosocial history: She maintains good interpersonal relationships between family member, neighbours, friends and relatives.

Environmental history: Patient home surrounding environment is good. There is a facility of a closed drainage system and proper disposal of waste.

Physical examination

General parameter:

Height: 160 cm, weight: 92 kg, body mass index (BMI): 35.93

Vital sign: temperature: 99.2 °F, pulse: 60 beat / min, respiration: 16 breath/min, blood pressure: 160/100mm of Hg

Mental status: She was semi-conscious and she had a Glasgow Coma Scale of 11.given the response after the stimulation.

Pulmonary/cardiovascular: Slow pulse rate and sound .respiration also abnormal and blood pressure is high. murmur sound is present.

Integumentary: no skin lesions .dry skin

Musculoskeletal system: She was obese and body mass index (BMI) of 35.93 .slow range of motion (ROM). Muscle weakness is present and a reduction in muscle strength. Peripheral oedema in lower extremities.

Speech: inability to talk. sound is present

DIAGNOSIS ASSESSMENT

Blood investigation: In complete blood count (CBC):

Hemoglobin is 10.6 mg/dl (11-13mg/dl), mean corpuscular hemoglobin concentration is 33.6 g/dl, Mean corpuscu-

lar volume (MCV) is 90 fl (78-98 fl), total RBC count is 3.52 m/ul, WBC is 9200 (4500-11,500 k/ul), platelet count is 139,000/ml (150,000 to 450,000), Hematocrit (Hct) Levels is 31.7 % (37 %-47 %), monocytes is 03 %(00-15%), Granulocytes is 74 % ()Lymphocytes is 20 %(20%-40%), red cell distribution width (RDW) is 10.9 (11.6-14.8), Eosinophils is 03 % (1-5 %) basophils is 00 % (0-1 %).

In kidney fuction test (KFT): urea is 36 (9.81 – 20.1 mg/dl), creatinine is 0.8 mg/dl (0.7-1.4 mg/dl), sodium is 133meq/l (135-145meq/l), potassium 4.5(3.5-5.5 meq /l).

In liver fuction test (LFT): alkaline phosphates is 86 (32-45g/l), Alanine transaminase (ALT) is 34 IU/L (0-50IU/L), aspartate aminotransferase, (AST) is 70 IU/L (10-40 IU/L), total protein ia 6.5 (23-38 g/dl), total bilirubin is 1.0 g/dl (1-1 g/dl), conjugated bilirubin is 0.2 mg/dl (0-0.25 mg/dl), unconjugated bilirubin is 0.8 mg/dl (0.2-0.7mg/dl), globulin is 2.8.

In Lipid profile total cholesterol is 159 (200-239 mg/dl) , triglycerides is 102 mg/dl(150-199 mg/dl) , low –density lipoprotein (LDL) Cholesterol is 94 mg/dl (130-159 mg/dl), high-density lipoprotein (HDL) cholesterol is 45 (35=45 mg/dl).

Calcium is 8.8 mg/dl (8.6-10.2 mg/dl)

Urine examination: Urine albumin is nil, urine sugar is nil, an epithelial cell is 1 cell /hpf.

In peripheral smear, red blood cell (RBC's) - normocytic normochromic platelets are adequate on smear, seen in clumps no hemiparasite seen.

An electrocardiogram (ECG): An ECG may reveal abnormalities in heart rhythm seen in the ECG.

Brain magnetic resonance imaging (MRI) finding: MRI brain was done. MRI brain showed the suggestive of haemorrhage transformation of acute infarct in left corona radiata and parietal- temporal region corresponding to left middle cerebral artery (MCA).

Fundas examination: In fundus examination was done, which was suggestive of grade II hypertensive retinopathy in both eyes, no evidence of papilla oedema was noted

THERAPEUTIC INTERVENTION

General measures: To check the vital sign (Temperature pulse respiration and BP.) airway, fluid and electrolyte balance and prevention of complications like seizures, pulmonary aspiration, pressure source, thrombophlebitis are mandatory. Health management includes physiotherapy, healthy diet.

Pharmacological management

Antiplatelet agents: Tab aspirin 75mg/day is a non-steroidal anti-inflammatory drug (NSAID) with anti-platelet action, which is used to inhibit platelet aggregation and useful in stroke. To give a low dose in the long term help to irreversible blocks the formation of thromboxane A₂ in platelets.

Osmotic diuretic: Inj. Mannitol 100 ml IV. Mannitol is an osmotic diuretic. To reduce of cerebral edema and increased intracranial pressure. To reduce vasogenic cerebral edema.

Antibacterial drug: Inj. Ceftriaxone – 1 gm IV. Ceftriaxone is the third-generation antibiotic from the family of the antibiotic.

Calcium channel blockers: Tab Amlodipin – 5 mg orally, Amlodipine is the calcium channel blocker.

Tab atorin 40mg orally. It works by blocking an enzyme (HMG-CoA-reductase) that is required in the body to make cholesterol. It helps for decreased the level of bad cholesterol and increases the level of good cholesterol.

Anticonvulsant drug: Inj. Levetiracetam 500mg IV, levetiracetam is the anticonvulsant drug. levetiracetam is the help for modulation of the synaptic neurotransmitter release with the help of binding to the synaptic vesicle protein SV2A in the brain.

Proton pump inhibitors (PPIs): Inj. pantoprazole 40 mg IV. Pantoprazole is more effective than H₂receptor blockers in reducing gastric acid secretion.

Antiemetic agent:- Inj. ondansetron 4 mg IV. Decreases nausea and vomiting.

Oxygen therapy:- oxygen administration 4 litres/min through a nasal catheter.

Nursing management

First of all makes nursing assessment with the help of observation to check the consciousness, weakness, speech, vital sign, the reaction of a pupil, size of a pupil. To make the client lie comfortably in bed. After checking vital signs ensure patient airway and to given O₂ therapy. elevate head end of the bed to 30° and railing bed is provided. To monitor BP.

Nursing diagnosis

1. Impaired physical mobility related to hemiparesis and loss of balance

Goal: to improve and maintain the increased strength and function of affected parts.

Intervention: - to given the proper position and the prone one or twice a day.

2. Impaired airway clearance related to disturbed breathing pattern.

Goal: To improve the breathing pattern

Intervention: assess the respiratory function and implement measures to maintain a patent airway and to improve breathing pattern. To give the prop up position.

3. Impaired nutrition due to less intake.

Therapeutic diet plan

Required the low sodium diet provides 2-3 gm sodium 1600-1800 calories which give adequate nutrition given. carbohydrate 200gm, protein 60gm fat 40 gm.

Physiotherapy and rehabilitation

Physiotherapy and rehabilitation are useful in the first few months after stroke. exercise, re-education, the provided of walking aids, where appropriate, toe springs adaptation to home.

Communication

Assess the difficulty in using language to communicate or question answer. Encourage the patient's effort to communicate. Speak slowly in simple and also provided consult speech therapists.

DISCUSSION

So many studies indicated that the recovery period within six weeks. If the patient is normal recovery within thirteen weeks. In severe strokes may take twenty weeks. Both cognitive and physical function improved with to help of exercise.⁸ She has a diagnosis of cerebral vascular accident. systemic hypertension is the secondary diagnosis. the patient gives the respondent well to treatment but the patient relative takes discharge against medical advice (DAMA). As a report of the MRI showing the suggestive of haemorrhage transformation of acute infarct in left corona radiata and parietal-temporal region corresponding to left MCA, the patient had further investigations to find out the cause of hemorrhagic shock.

The patient reacted well to therapy, but more approaches may be used in the future to help in further changes. The rehabilitation and recovery of the patient will mostly depend on the phase of the disease condition. To make improvements and recovery expect the team also requires. In the stroke phase and rehabilitation is dependent on the stage, in stroke management to involves the interprofessional staff and team to manage the patient.

Prognosis

Cerebrovascular accident is a major cause of disability and death. The majority (66%) of stroke that requires hospitalization occur in adults over 65. If the patient has an elderly spousal caregiver who also has health concerns, home main-

tenance can be a particular challenge. Restricted family members may be living nearby to provide assistance.^{9,10}

Improvement time after a cerebrovascular accident is different for all people it can take weeks, months, or even years. But few people recover fully, but others have long-term. she takes a long period to recover.

CONCLUSION

Hypertension related stroke is a common incident; It is a major cause of mortality and morbidity in the elderly. She fully depends on her family. So health talk taught them the importance of Physiotherapy and its implementation at home after discharge and its usefulness in rehabilitation. Being a health worker it's an opportunity and responsibility to assist the patient and caregiver in the transition through acute hospitalization, long-term care, rehabilitation, and family requires continuous nursing evaluation and intervention adaptation in response to evolving needs to maximise.

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Table 1: Significant medical timeline

Significant medical timeline			
Time	Problem	Place	Action /progress
Jun 2015	Vertigo, chest pain,	Nursing home	Hypertension To start tab. Amlodipine
Dec 2019	Shortness of breath, chest pain	Hospital in Akola (2 days hospitalization)	Coronary Angiography was done. Find out double vessel coronary artery disease.
Jan 2020 (present history)	Right side hemiplegia, inability to talk	Hospital	a cerebrovascular accident with systemic hypertension with double vessel coronary artery disease. transferred over to the cardiologist and neurologists.