

## Cerebro Vascular Accident (CVA)-A Medical Case Study

**Sophia G.**

Lecturer, Department of Medical Surgical Nursing, DR. B.R. Ambedkar Institute of Nursing,  
Dr. B. Ramch Campus, Bangalore, India

Email: [Sophiageorge11@gmail.com](mailto:Sophiageorge11@gmail.com)

DOI: <http://doi.org/10.5281/zenodo.2548987>

### Abstract

**Objectives:** To perform a health assessment, identify the nursing needs and prevent complication, formulate nursing diagnosis, provide comprehensive nursing care, learn about cerebro vascular accident and its management teach family members and patients in detail about follow-up care. **Methods of collection:** case sheet, wife. **Sample:** MICU. **Setting:** Government Rajaji hospital, Madurai. **Conclusion:** By this care study, I got an opportunity to provide comprehensive nursing care to my client who had cerebrovascular accident. It is of paramount importance for the nurses to become competent in providing nursing care for the patients with these problems.

**Keywords:** CVA patient, IMCU, Govt. Rajaji hospital

### INTRODUCTION

Stroke is a worldwide health problem. It makes an important contribution to morbidity and mortality and disability [1-4]. WHO defines stroke as rapidly developing clinical signs of focal disturbance of cerebral function, lasting more than 24 hours and leading to death [5-7].

Although the prevalence of stroke appears to be comparatively less in India than in developed countries, it is less likely to increase proportionally with the increase in life expectancy [8-10].

As I was interested in studying central nervous system disorders and caring patients with cerebro vascular accident, I have selected a patient with CVA for my medical case study in critical care nursing [11]. The material is presented here to provide an overall frame work of nursing care for patient with cerebro vascular accident [12].

### OBJECTIVES

- To perform a health assessment of the client with cerebro vascular accident.
- To identify the nursing needs of the

client with cerebro vascular accident.

- To formulate nursing diagnosis for the client with cerebro vascular accident.
- To provide comprehensive nursing care to patient with cerebro vascular accident
- To learn about cerebro vascular accident and its management in detail.
- To identify and prevent complication.
- To teach family members and patients in detail about follow-up care.

### HISTORY COLLECTION

Ward: Intensive Medical Care Unit

Medical diagnosis: Cerebro vascular accident

### Chief Complaints

Patient was brought to hospital in unconscious state with tracheotomy (on mechanical ventilation).

### History of Present Illness

Patient was apparently normal before 7 days. He developed giddiness and became unconscious, and was taken to a private hospital where he was diagnosed having

posterior inferior cerebral artery infarct. On admission his GCS was 5\15, bp=150\90, pulse rate-100\min and spo2-100%. he was treated for the infarct appropriately and he was extubated and shifted to ward, as his GCS further deteriorated and showed signs of aspiration he was again shifted to ICU and reinsulated. Under IV sedation tracheostomy was done but he was discharged again medical advice from private hospital.

### **Past Medical History**

He is a known case of hypertension on irregular treatment.

Not a known case of pulmonary tuberculosis, bronchial asthma, coronary artery diseases, diabetes mellitus, chronic kidney disease. No drug allergy.

### **Past Surgical History**

Patient not suffered from any major illness before or undergone any surgery.

### **Family History**

He lives as a nuclear family along with his wife and child. Non-Consanguineous type of marriage, No family history of diabetes mellitus, hypertension, epilepsy asthma etc.

### **Socio-Economical History**

Patient is living in own house they are getting corporation water supply. They are getting good ventilation and adequate lightening and electrical facilities are available. He is working as an auto-driver they are earning rupees 3000/-per month. They are lower middle class family.

### **Personal History**

He was mixed type diet. Patterns of rest and sleep, rest 2 hours in afternoon/6hrs, night sleep. His hobby is watching television. His Activities of daily living was nil. His Bowel and bladder habits constipated frequently, change in consistency of stools, Bladder-normal. He was Alcohol / smoker, consumes brandy 3-4 times a week amount varies, smokes cigarette 1 packet\day brand varies for past 20 years.

### **Spiritual History**

He belongs to Hindu family. He is going temple regularly for festival occasion. He is having faith in God.

### **Environmental History**

Patient is living in a village for his own house. There is adequate water, lightening and electrical facilities are available. There are using a open drainage system so there is more chance of getting communicable diseases.

## **PHYSICAL ASSESSMENT**

### **General Appearance**

**Consciousness:** stuporous

**Body built:** Moderately built

**Activity:** nil

**Orientation:** Not Oriented to Time, Place and Person.

## **SYSTEMIC EXAMINATION**

### **Central Nervous System**

Stuporous, responds to deep painful stimuli

Not oriented to time, place and person

GCS- 5\15

**Cranial Nerve Assessment**

*Olfactory:*

*Optic:*

*Oculomotor:*

*Trochlear:*

*Trigeminal:*

*Abducent:*

*Facial:*

*Vestibulocochlear:*

*Glossopharyngeal:*

*Vagus:*

*Accessory:*

*Hypoglossal:*

cannot be tested

**Spinomotor System**

*Table 1:*

	RIGHT	LEFT
BULK	N	N
TONE	+	-
POWER	-	-
REFLEX	+	+
PLANTAR	-	-

**Respiratory System**

*Inspection:* on tracheotomy, mechanical ventilation-SIMV mode

*Palpation:* Trachea in midline,

*Auscultation:* vocal from it us normal, bilateral air entry normal

*Percussion:* Normal resonance

**Cardiovascular System**

*Inspection:* No visible pulse, distended neck veins, no central or peripheral cyanosis.

*Palpation:* Pulse rate 86/minute.

*Percussion:* Normal resonance

*Auscultation:* S1S2 heard, No murmur present

**Gastrointestinal System**

*Inspection:* No scare, lesion

*Auscultation:* Bowel sounds heard in all four quadrants

*Palpation:* Soft, tender, no palpable mass, organomegally

*Percussion:* No fluid or gas collection

**Genito Urinary System**

CBD present connected to urine bag, urine concentrated.

**Musculo Skeletal System**

Paralyzed

**Endocrine System**

No thyroid enlargement

No intolerance to heat or cold

**Integumentary System**

Brown complexion, no scabies, skin turgor normal

**VITAL SIGNS**

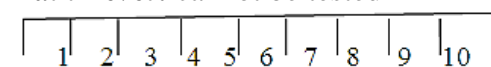
*Temperature:* 98.6 degree F

*Pulse:* 84/ MINUTE

*Respiration:* 24/ minute intubated on mechanical ventilator SIMV mode

*Blood Pressure:* 240/120MMHG

*Pain Level:* cannot be tested



*Weight:* 50kg

*Height:* 154cm

**INVESTIGATIONS**

Investigations	Patient value	Referral value	Remarks
<b>Hemogram:</b> Haemoglobin Total count	10.7% 7,500 cells/mm	12-14gm% 4,000-11,000 cells/mm	decreased within normal limits
<b>Differential Count:</b> Polymorphs Lymphocytes Eosinophils	60% 46% 3%	50% - 70% 30% - 60% 1% - 4%	normal limits Normal limits Normal limits Normal limits
Blood glucose	78mgs%	80-120mgs%	Normal limits Normal limits
B. Urea Sr. Creatinine	50 mg 1.2 mg	20-40mg 0.7 - 1.5mg	Normal limits Normal limits Normal limit Normal limits
<b>Liver function test:</b> T.Bilirubin Direct bilirubin Total protein Albumin	8.7umol/L 2.6umol/L 7.0 g/dl 4.3g/dl	5 – 17 umol/L 1.7 – 3.7 umol/L 6.0 – 8.0 g/dl 3.5 – 5.5g/dl	

**ECG:** LVH with strain

**ECHO:** Normal LV systolic function.

**CHEST X-RAY**

Congestion with mucus

**CT SCAN**

Revealed acute posterior inferior cerebral artery tentorial infarct.

Name of the Drug, Dosage, Route & Frequency	Action	Indications	Side effect	Nursing Responsibility
Inj. ceftriaxone 1gm IV Bd (ANTIINFECTIVE)	Binds to bacterial cell wall membrane causing cell death.	Perioperative prophylaxis, intra abdominal imfections and other infections	Headache, dizziness, diarrhea, glossitis, psedomembraneous colitis, thrombocytopenia, proteinuria, vaginitis, pruritus, nephrotoxicity	Obtain a history to determine previous use of antibiotics and the side effects. Assess for infection at beginning and throughout Observe for s\s of anaphylaxis
Inj. Metrogyl 400mg IV Tds (ANTI MICROBIAL)	Dried acting amoebicide, trichomonacide, binds, degrades DNA in organisms	Prophylactic against bacterial infections	Headache, dizziness, confusion, ataxia, convulsion, dry mouth, metallic taste, nausea, vomiting, albumin urea, decreased libido, pruritis,	Check vision if long term use, monitor intake and output renal function
Tab.clopidrogrel 75 mg oral od (ANTIPLATELET)	Inhibits platelet aggregation	Reduction of atherosclerotic events (Myocardial	Abdominal pain, pruritis, purpura, Chest pain, edema.	Monitor for thrombocytic purpura Monitor CBC and

AGENT)		infarction, stroke)		differential platelet count
Tab. Enalapril 2.5mg oral bd (ACE INHIBITORS)	Block the enzyme that normally converts angiotensin I to the potent vasoconstrictor angiotensin II.	Hypertensive alone or for patient with diabetes and hypertension.	Vertigo, hypotension, diarrhea, abdominal pain, taste disturbances, proteinuria	Maintain blood pressure chart Monitor blood counts with differential counts.
Tab. atorvastatin 10mg H.S.oral (LIPID LOWERING AGENT)	Inhibits(HMG-COA)reductase	Adjunct to diet therapy in management of hypercholesterolemia Reduction of lipids and reduces the risk of M.I and stroke.	Constipation, flatus, rashes, heartburn	Obtain a diet history Monitor LFT,AST.
Inj. Ranitidine IV Tds (H2 RECEPTOR ANTAGONIST)	Inhibits histamine at H2 receptor site in parietal cells which inhibits gastric acid secretion.	Short term treatment of duodenal ulcers, heartburn, and treatment of stress induced gastro intestinal bleeding.	soreness, headache, diarrhea, itching, dizziness, hallucinations, Arrhythmias, Altered taste, black tongue, constipation, dark stools, diarrhea, drug-induced hepatitis, nausea	Assess patient for epigastric or abdominal pain and frank or occult blood in the stool, emesis, or gastric aspirate. Inform patient that it may cause drowsiness or dizziness. Inform patient that increased fluid and fiber intake may minimize constipation
Intravenous fluids: 1 pint RL Mannitol –osmotic diuretics	Increase the osmotic pressure of glomerular filtrate and excretion of water	Adjunct in treatment of acute oliguric renal failure, edema, increased ICP or IOP	Transient volume expansion, pulmonary edema, increased potassium level.	Monitor vitals, intake output chart, dyspnea, crackles.

## DISEASE CONDITION CEREBROVASCULAR ACCIDENT

### Definition

The sudden death of some brain cells due to lack of oxygen when the blood flow to the brain is impaired by blockage or rupture of an artery to the brain. A CVA is also referred to as a stroke.

## REVIEW OF ANATOMY AND PHYSIOLOGY OF BRAIN INTRODUCTION

The human nervous system is made up of two main components: the central nervous system (CNS) and the peripheral nervous

system (PNS). The CNS is composed of the brain, the cranial nerves, and the spinal cord. The PNS is made up of the nerves that exit from the spinal cord at various levels of the spinal column as well as their tributaries. The autonomic nervous system (divided into the sympathetic and parasympathetic nervous system) is also considered to be a part of the PNS and it controls the body's many vegetative (non-voluntary) functions.

### Brain

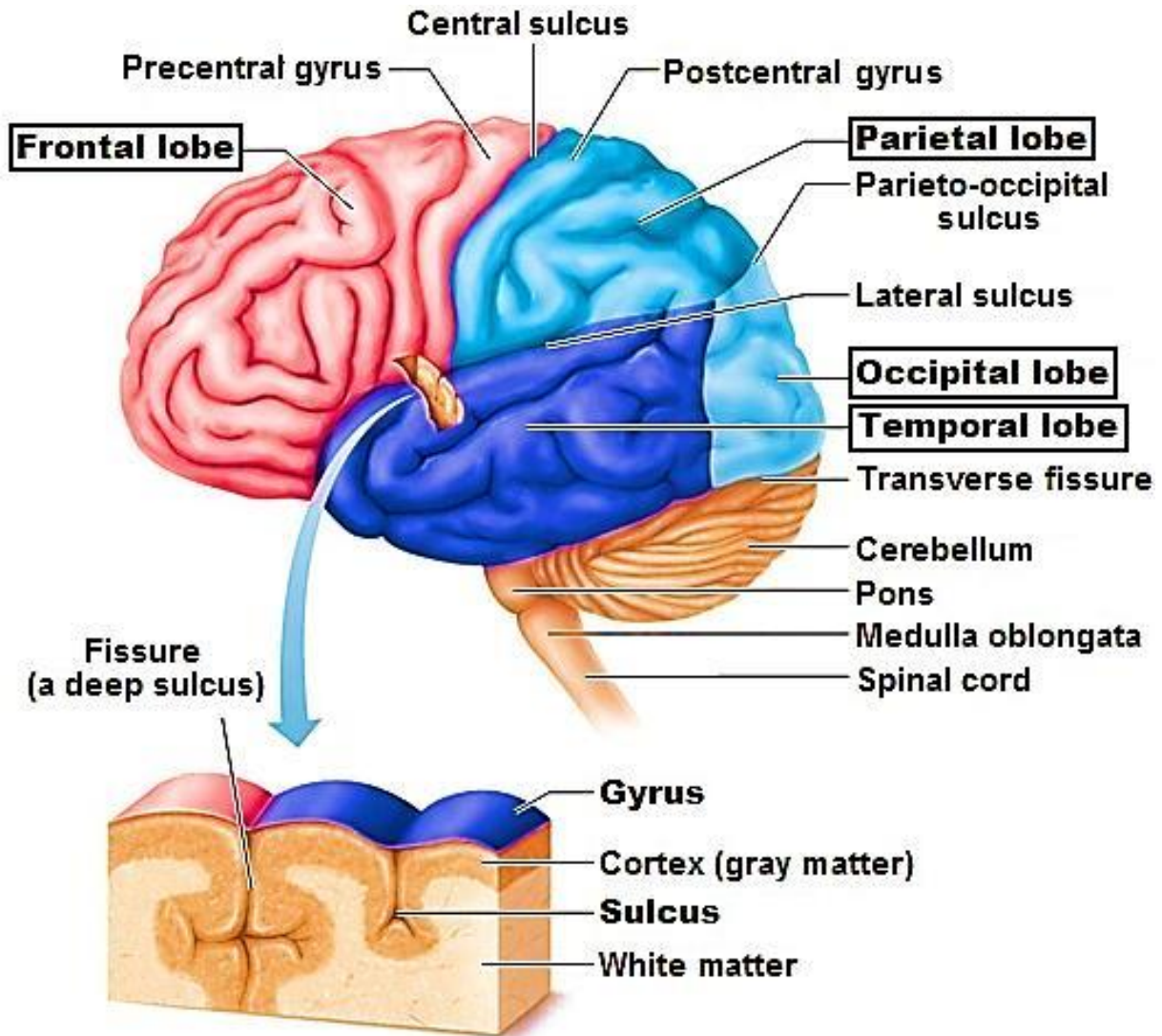
The human brain serves many important functions ranging from imagination,



memory, speech, and limb movements to secretion hormones and control of various organs within the body. These functions are controlled by many distinct parts that serve specific and important tasks. These

components and their functions are listed below.

*Brain Cells, Cerebrospinal Fluid, Ventricles, Brainstem, Thalamus, Cerebellum, Cerebrum*



**Figure 1: Structure of the Brain**

**Causes**

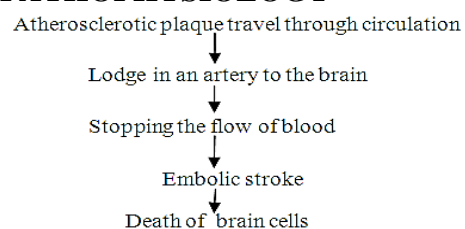
1. Thrombosis
2. Hardening of the artery
3. Cholesterol and Calcium deposit on the wall of the artery
4. Embolus
5. Aneurysm
6. Cerebral hemorrhage

2. High blood pressure
3. Diabetes mellitus
4. Alcoholic

**Risk Factors**

1. Chronic smoker

**PATHOPHYSIOLOGY**



**CLINICAL MANIFESTATIONS**

*Table 2:*

<b>BOOK PICTURE</b>	<b>PATIENT PICTURE</b>
<p>The most common symptom is weakness or paralysis of one side of the body with partial or complete loss of voluntary movement or sensation in a leg or arm. There can be speech problems and weak face muscles, causing drooling. Numbness or tingling is very common. A stroke involving the base of the brain can affect balance, vision, and swallowing, breathing and even unconsciousness.</p> <p><b>DIAGNOSTIC EVALUATION:</b>            Medical history            Physical examination            A CAT scan (a special X-ray study) of the brain is often done to show bleeding into the brain; this is treated differently than a stroke caused by lack of blood supply. A CAT scan also can rule out some other conditions that may mimic a stroke.            A soundwave of the heart (echocardiogram) may be done to look for a source of blood clots in the heart.            Narrowing of the carotid artery (the main artery that supplies blood to each side of the brain) in the neck can be seen with a soundwave test called a carotid ultrasound</p>	<p>Paralyzed and complete loss of movement</p> <p>-</p> <p>-</p> <p>unconscious</p> <p>History collected Physical examination done</p> <p>Revealed acute posterior inferior cerebral artery territorial infarct</p> <p>Normal LV systolic function</p> <p>Not done</p>

**Differential Diagnosis**

1. Subdural hematoma
2. Brain tumor
3. Viral encephalitis
4. Dehydration or an imbalance of sodium, calcium, or glucose

**Treatment**

<p>Early use of anticoagulants to minimize blood clotting has value in some patients.</p> <p>Treatment of blood pressure that is too high or too low may be necessary. (Lowering elevated blood pressure into the normal range is no longer recommended during the first few days following a stroke since this may further reduce blood flow through narrowed arteries and make the stroke worse.)</p> <p>The blood sugar glucose in diabetics is often quite high after a stroke; controlling the glucose level may minimize the size of a stroke.</p> <p>Drugs that can dissolve blood clots may be useful in stroke treatment.</p> <p>Oxygen is administered as needed.</p>	<p>Not given</p> <p>Blood pressure treated with Tab. Enalapril 2.5mg oral bd</p> <p>Not given</p> <p>Tab.clopidogrel 75 mg oral od given.</p> <p>Patient on mechanical ventilator SIMV mode</p>
---	---

**REHABILITATION**

When a patient is no longer acutely ill after a stroke, the aim turns to maximizing the patient's functional abilities.

This can be done in an inpatient rehabilitation hospital or in a special area

of a general hospital and in a nursing facility.

The rehabilitation process can involve speech therapy to relearn talking and swallowing, occupational therapy for regaining dexterity of the arms and hands,

physical therapy for improving strength and walking, etc.

The goal is for the patient to resume as many of their pre-stroke activities as possible.

**NURSING THEORY APPLICATION**

**Orem’s General theory of Nursing**

**Introduction**

Developed by Dorothy E. Orem. Orem first published her concept of Nursing as providing for an individual’s self-care in 1959 in Guides for Developing Curricula for the Education of practical Nurses” a

government publication.

Orem’ theory consists of 3 related theories, collectively referred to as Orem’s general theory of Nursing.

**Orem’s conceptual framework for nursing**

**Self Care Theory**

1. Self care
2. Self care agency
3. Self care requisites
4. Therapeutic self care demand

**Self Care Deficit Theory**

**Nursing System Theory**

**BASIC CONDITIONING FACTORS**

Age	48 years
Gender	Male
Health state	Disability due to health condition, therapeutic self care demand
Sociocultural orientation	Formal education up to high school, Indian, Hindu
Health care system	Institutional health care
Family system	Nuclear family, staying with his family members
Patterns of living	Along with wife ,son and daughter

**UNIVERSAL SELF-CARE REQUISITES**

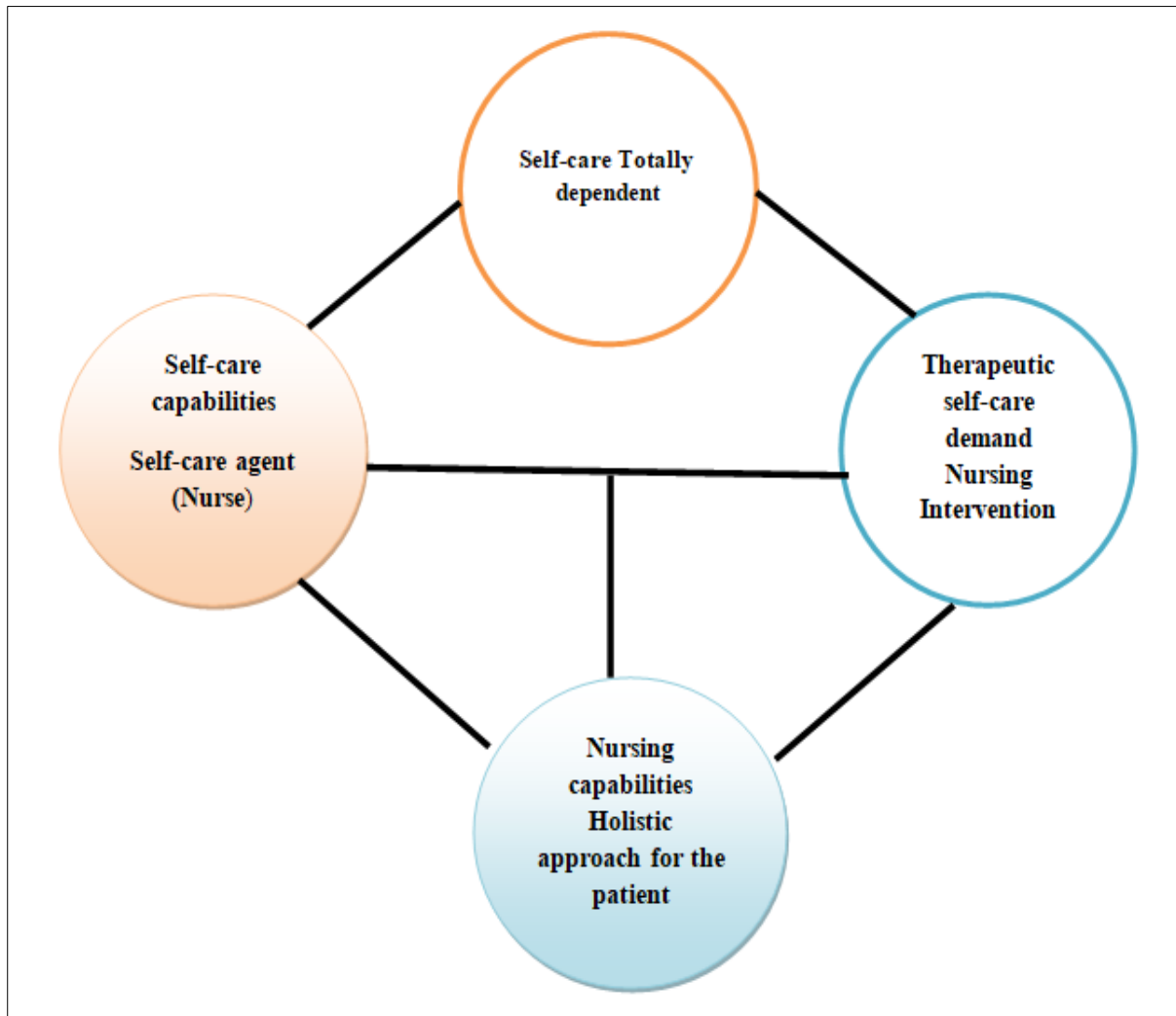
Air	On mechanical ventilation SIMV mode
Water	Fluid intake is not sufficient. Turgor normal for the age
Food	Hb – 9.4 gm%, Food intake is not adequate
Elimination	On CBD, no bowel movements
Activity/ rest	unconscious
Social interaction	Poor communication due to loss of consciousness
Prevention of hazards	Need instruction on hygiene and diet and about follow - up care

**DEVELOPMENTAL SELF-CARE REQUISITES**

Maintenance of developmental environment	Not Able to feed self , Difficult to perform the dressing, toileting etc
Prevention/ management of the conditions threatening the normal development	Feels that the problems are due to her own behaviors ,unconscious



**OREM'S CONCEPTUAL FRAMEWORK FOR NURSING**



**NURSING DIAGNOSIS**

1. Impaired gas exchange related to decreased oxygen supply as evidenced by ABG analysis
  2. Ineffective Breathing Pattern related to hypoventilation as evidenced by vital signs
  3. Ineffective cerebral tissue perfusion related to interrupted blood flow as evidenced by increased intra cranial pressure
  4. Self care deficit related to inability to move limbs as evidenced by dull grooming
  5. Risk for imbalanced fluid volume related to inability to take in fluids by mouth (fluids and medications administered)
  6. Risk for impaired skin integrity related to immobility
  7. Interrupted family processes related to health crisis as evidenced by verbalization
  8. Disturbed thought process related to impaired cerebral functioning
- ♣ **Subjective data:** patient unconscious, his attended complaints of diaphoresis, initially confused, nasal flaring
  - ♣ **Objective data:** unconscious GCS:5\15, on mechanical ventilation-SIMV mode, bilateral coarse crepitation present
  - ♣ **Nursing diagnosis:** Impaired gas exchange related to decrease oxygen supply as evidenced by ABG analysis.
  - ♣ **Goal:** Gas exchange will be improved.

<i>Interventions</i>	<i>Implementation</i>	<i>Rationale</i>	<i>Evaluation</i>
Assess patients respiratory rate, depth, rhythm	On mechanical ventilator rate- 18 breaths\minute, spo2 -100%	Help to plan care	The patient was Maintained ABG values between 35-45mmhg
Auscultate breath sounds every one to two hours and as needed.	Bilateral air entry normal, coarse crepitation present	Help to plan care	
Ensure patent airway and assess the need for suctioning(hyper oxygenate before suctioning)	Patient on tracheostomy and SIMV mode	Prevent cerebral hypoxia	
Monitor ABG'S and notify the physician of significant changes	ABG value:paco <sub>2</sub> =45mmhg,	To prevent complications and initiate treatment	
Assist with turning every two hours with in limits of patients status	Planned every two hourly turning	Promotes lung drainage and alveolar expansion.	
Monitor intake\output chart	Intake output maintained	for mobilization of secretions and avoid fluid overload	

**Subjective data:** unconscious, his wife complaints of diaphoresis, patient not responding to commands

**Objective data:** patient unconscious GCS-5\15.bilateral pupil 2mm reacting to light

**Nursing Diagnosis:** Ineffective cerebral tissue perfusion related to decreased cerebral blood flow as evidenced by increased intra cranial pressure.

**Goal:** cerebral tissue perfusion will be maintained

<b>Plan of Action</b>	<b>Implementation</b>	<b>Rationale</b>	<b>Evaluation</b>
Assess neurological status hourly	GCS=5\15	To obtain baseline data	The patient was maintained Tissue perfusion
Determine presence of changes in cognition, vision, or sensory/motor responses, hemiparesis, headache, problems with speech and swallowing	Unconscious ,Quadriplegia present	behavioral changes indicative of ineffective cerebral perfusion	
Evaluate blood pressure and maintain chart	BP chart maintained	To assess any complication and prevent it	
Monitor fluid and electrolyte status.	Intake output chart maintained	Imbalances have a direct bearing on brain perfusion and function	
Note history of syncope, brief/intermittent periods of confusion/blackout.	Collected history regarding syncope	Suggests conditions such as orthostatic hypotension, syncope, TIA.	
Administer iv mannitol as prescribed	Administered iv mannitol 150ml bd as prescribed	To relieve increased intracranial pressure	
Administer medications as indicated	Administered tablet. enalapril 2.5mg bd for reducing blood pressure	to treat underlying condition	

Involvement of others who have same problems and needs	Involvement of another patient who is suffering from carcinoma oesophagus and allowed them to share their concerns	Provides role model and sharing of information.	
--	--	---	--

**Subjective data:** patient unconscious, his wife complains that she couldn't move her husband alone for meeting his self needs

**Objective data:** unable to move his hands and legs (quadriplegia), unconscious, NG tube present, on ventilator

**Nursing diagnosis:** self care deficit (hygiene, toileting, grooming, feeding) related to stroke sequale

**Goal:** self care will be maintained.

Plan of Action	Implementation	Rationale	Evaluation
Assess the level of self care deficit	Assessed the self care needs of the patient	To obtain baseline data	Self care needs satisfied
Provide oral care, bed bath and back care	Oralcare, bedbath and back care given	To maintain and meet basic needs	
Provide catheter care	Catheter care given	To prevent urinary tract infection	
Administer nasogastric feeding as ordered	Feeding given through nasogastric tube as ordered	To meet nutritional needs	
Administer medicines to maintain bowel elimination	Administered dulcolax suppository as ordered.	To induce elimination and prevent constipation.	

### HEALTH EDUCATION

Explained about the disease condition and the available treatment modalities and the prognosis of the disease.

#### Personal Hygiene

- Advised the care giver regarding providing oral care
- Importance of sponge bath and back care
- Demonstrated eye care and instillation of eye drops

#### Medication

Advice to take regular medication and also advised not to stop or reduce the medicine without Doctor's order.

#### Exercise

- Advised the care giver the importance of passive exercises and frequency of position change.
- Advised to do mild passive exercise
- Advised the family members to assist the patient in doing passive range of motion exercise.

#### Nutrition

- Advised the care giver to give liquid diet
- Advised to avoid solid foods until swallowing is stabilized
- Advised the care giver the importance of feeds rich in nutrients.

#### Follow Up

1. Advise about the importance of follow up care.
2. Teach about the next schedule of visit.

### RECORDING AND REPORTING

#### Daily Care and Nursing Intervention

##### Care Given

- ❖ Monitoring the vital signs.
  - Temperature: 37<sup>0</sup>C
  - **Pulse:** 84 beats/per/mts
  - **Respiration:** 22 breath/per/mts
  - **Blood pressure:** 110/70 mm of Hg
- ❖ Back care morning and evening
- ❖ Position changed every second hourly
- ❖ Passive exercise given Upper Extremities

- ❖ Position changed every 2 hourly especially lateral position provided, and explain to the patient why position should be changed and what are the advantages.
- ❖ Nutritional assessment
  - **24 hours Recall assessment done from 7am to next day 7am**
- ❖ Health education given regarding personal hygiene--- importance of hand washing.
- ❖ Intake and output chart should be recorded.
- ❖ Drugs given as per prescription.
- ❖ Health education given regarding exercise and demonstrate the method
- ❖ Rule out the problems of the patient
- ❖ Assess the sleep and mental status of the patient general condition weak and not able to walk so, encourage for ambulation

**Table 3: Hours Recall Method- Nutritional Assessment**

Date	Time	Food items	Quantity	Kcal	Protein gm	CHO gm	FAT gm	Cal problem	Iron mgm
16.12.14	6 am	Milk	200ml	120	6	4gm	1.3	343.6	0.8
	9.30 am	Idly	4 nos	250	9.2	55.2	0.4	0.6	1.6
	11 Am	Ragiconji	80gm150ml	350	9.6	112.2	0.4	4.0	2.0
		EGG	1	80	5.8	0.5	5.7	30	1.0
	1.30 pm	Rice	400gm	350	9.6	112.2	0.4	4.0	2.0
		Sambar dhal	(100ml) 75gm	250	8.5	6	12	10.8	1.4
		Rasam	50ml	7.5	0.4	1.4	0.25	0.4	0.25
		G.L.Veg	50ml	7.5	0.4	1.4	0.25	0.4	0.25
		Butter milk	100ml	33	1.2	1.22.5	4.0	0.45	
	3pm	Milk	100ml	60	3	2	6.5	171.8	0.4
	5pm	Milk	200ml	120	6	4	13	343.6	0.8
	8 pm	Rice	400gm	350	9.6	112.2	0.4	4.0	0.25
		Rasam	50ml	7.5	0.4	1.4	0.25	0.4	0.45
		Sambar dhal	(100ml) 75gm	250	8.5	6	12	10.8	1.4
		Butter milk	100ml	33	1.2	1.2	2.5	4.0	0.45
	10 pm	Milk	200ml	120	6	4	13	343.6	0.8
17.12.14	8am	Milk	200ml	120	6	4	13	343.6	0.8
		<b>Total</b>		<b>2797.5</b>	<b>73.7</b>	<b>503.7</b>	<b>111.2</b>	<b>1653.2</b>	<b>32.2</b>

### CONCLUSION

By this care study, I got an opportunity to provide comprehensive nursing care to my client who had cerebro vascular accident. It is of paramount importance for the nurses to become competent in providing nursing care for the patients with these problems. More over nurse must educate the general public to promote general health and family members in caring these patients.

### REFERENCES

1. Anne E. Belcher. *Cancer Nursing. Missouri: Mosby Publications.* 1992.
2. Basavanthappa B.T. *Medical Surgical Nursing. Second edition. Jaypee brother's medical publishers.* 2009.
3. Barbara. K. Timby. *Introductory medical surgical Nursing. London: Lippincott Williams &Wilkins.* 2007.
4. Carol Taylor, Carol Lillis & Pricilla Lemone. *Fundamentals of Nursing. New Delhi: Wolters Kluwer Health. Private Limited.* 2003.
5. Joyce. M. Black. *Medical-Surgical Nursing. 7<sup>th</sup> edition. India: Elsevier publication.* 2005.
6. Kothari C.R. *Research Methodology:*

- Methods and Techniques 2<sup>nd</sup> edition. *New Delhi: Vishva Prakash Publishers.* 2001.
7. Kozier Barbara et al. Fundamentals of Nursing: Concepts, Process, and Practice. 6th edition. *Upper Saddle River, NJ, Prentice Hall Health publishers.* 2000.
  8. Kumar & Clark. Clinical Medicine. 5<sup>th</sup> edition. *W.B. U.K. Saunders Pvt Ltd.* 2002
  9. Lewis. Text book of Medical Surgical Nursing. 9th edition. *Mosby. st. Louin Missouri.* 2011.
  10. Lippincott Williams Wilkins. Manual of Nursing Practice. 9<sup>th</sup> edition. *New Delhi: Wolters Kluwer (India) Pvt Ltd.* 2010.
  11. Long Phipps. Medical Surgical Nursing. 3<sup>rd</sup> edition. *London: Mosby.* 1993.
  12. Family care giving for patients with stroke: review and analysis. *Journal of the American Heart Association.* December 2008.