

Medications

- Aspirin chewable tablet 81 mg oral daily

Pharmacologic class: Salicylate (NDH, 2023)

Therapeutic class: NSAID (NDH, 2023)

Patient is taking aspirin to decrease platelet aggregation and clot formation in the acute phase of ischemic stroke (Capriotti, 2021). This patient may also be taking aspirin for mild pain (NDH, 2021).

Key nursing assessment: Educate the patient to take with food and a full glass of water to reduce gastrointestinal side effects (NDH, 2023).

- ceftriaxone (ROCEPHIN) injection 1 g daily

Pharmacologic class: Third-generation cephalosporin (NDH, 2023)

Therapeutic class: Antibiotic (NDH, 2023)

Key nursing assessment: Assure patient reports any blood dyscrasia immediately (NDH, 2023).

The patient is taking ceftriaxone for treatment of cystitis.

- HEParin (porcine) injection 5,000 units subcutaneous every 12 hours

Pharmacologic class: anticoagulant (NDH, 2023)

Therapeutic class: anticoagulant (NDH, 2023)

The patient is taking this medication to prevent anticoagulation (NDH, 2023).

Key nursing assessment: Monitor for bleeding (NDH, 2023).

- Insulin lispro (Humalog) 100 units/ mL injection 2-12 units every 6 hours

Pharmacologic class: Human insulin (NDH, 2023)

Therapeutic class: Antidiabetic (NDH, 2023)

The patient is taking this medication because her blood sugar is 108 mg/dL. A normal sugar is 70-99 mg/dL. Insulin will decrease her blood sugar (NDH, 2023).

Key nursing assessment: Assess the patient for injection site reactions such as phlebitis (Hinkle et al., 2021).

Demographic Data

Date of Admission: 01/26/2024
Admission Diagnosis/Chief Complaint: Suspected Stroke
Age: 57
Gender: female
Race/Ethnicity: African American
Allergies: Penicillin
Code Status: Full Code
Height in cm: 162.6 cm
Weight in kg: 100 kg
Psychosocial Developmental Stage: Generativity vs. Stagnation
Cognitive Developmental Stage: Formal operational stage
Braden Score: 16
Morse Fall Score: 44
Infection Control Precautions: droplet precautions due to Influenza

Pathophysiology

Disease process: There are several types of strokes a person may experience. A stroke may occur for several different reasons. It may be that a blood clot has traveled to a crucial area of the body such as the cerebral artery. A thrombus traveling blocking an artery can cause a stroke. A stroke can occur when oxygen is not being properly delivered to your brain. "Located at the base of the brain, the circle of Willis provides collateral circulation in the event that one of the major cerebral vascular routes should occlude. The circle of Willis is a frequent site of aneurysm formation. Cerebral aneurysms are weaknesses of the arterial wall that are susceptible to rupture, causing a hemorrhagic stroke... Cranial nerves are sensitive to changes in circulation of the brain and intracranial pressure. In conditions of stroke, tumor, or brain injury, the cranial nerves can become dysfunctional. When examining a patient, cranial nerve dysfunction commonly indicates that there is a disturbance within the opposite side of the brain. For example, when an individual suffers a stroke in the right cerebral hemisphere, there will be a left-sided facial droop caused by the dysfunction of cranial nerve VII, the facial nerve... An ischemic stroke is caused by a thrombus or embolus that lodges in a cerebral artery and blocks blood flow to the brain tissue. Ischemia of brain tissue leads to cerebral infarction, which is the death of brain cells. A hemorrhagic stroke is caused by rupture and hemorrhage of a cerebral artery, leading to compression and toxicity of brain cells and loss of cerebral blood flow. Approximately 85% of strokes are due to ischemia, whereas 15% are hemorrhagic strokes... Another kind of ischemic injury of the brain is called a transient ischemic attack (TIA). Many persons call this a "mini-stroke," which is an inaccurate label. A TIA is a disruption of cerebral circulation with neurological deficits that are reversible and last for less than 24 hours. In a TIA, the body naturally dissolves the clot that caused the ischemia, circulation returns, and there is no permanent neurological injury. However, TIA is often a warning sign of future stroke (Capriotti, 2020)."

S/S of disease: There is not enough concrete evidence that the patient has had a stroke. However, it is suspected that she has based upon her symptoms such as previous history of stroke, right sided paralysis, the stroke assessment, and an altered cognitive ability and musculoskeletal control. Signs and symptoms of someone who has suffered either a ischemic stroke or hemorrhagic stroke share commonalities. Motor, neurologic, sensory, motor, and speech deficits are commonly seen (Capriotti, 2020). This patient is seen to have these symptoms. The stroke assessment revealed that the patient could not identify pictures of common objects, speech and cognition were impaired, patient was unable to state the date or where she lives, right sided movements are impaired in the lower extremity and flaccid in the upper extremity. The patient also displays extreme difficulty communicating with others, the patient was unable to move her right arm and has diminished movement in her right leg. "Patients who suffer ischemia in the left cerebral hemisphere will exhibit weakness or paralysis on the right side of the body (Capriotti, 2020)." "My patient is experiencing this right-side weakness and paralysis." "Stroke manifestations occur most often as neurological deficits on one side of the body. Common symptoms of stroke include hemiparesis (weakness of extremities on one side of the body) or hemiplegia (paralysis; complete loss of function of extremities on one side of the body), loss of sensation in an extremity on one side of the body, slurred speech, and facial droop with weakness. Some patients have disorientation, confusion, and drowsiness, which can become stupor or coma (Capriotti, 2020)." This patient is confused, she is A&O x2.

Method of Diagnosis: To determine that a stroke has occurred, an assessment should be done including neurological and cardiac examinations. "Diagnostic testing needs to include electrocardiography, chest x ray, blood work, and brain imaging studies. This testing should rule out other pathological processes with symptoms that could mimic stroke (Capriotti, 2020). This patient has been ordered a 2D echo, a CT, a Chest Xray, and an MRI. The results were not available at the time of data collection for this assignment. The stroke assessment has been performed and abnormal results included: the patient could not identify pictures of common objects, speech and cognition were impaired, patient was unable to state the date or where she lives, right sided movements are impaired in the lower extremity and flaccid in the upper extremity, extreme difficulty communicating with others, the patient was unable to move her right arm and has diminished movement in her right leg.

Treatment of disease: "To avoid stroke, avoid tobacco use, high use of salt, fat, and high intake of calories, excessive alcohol consumption, and drug use... "The patient has use of the 20% of ipsilateral neurons on the right side of the body that are retrained during the rehabilitation period... Treatment for acute ischemic stroke utilizes IV thrombolysis, which dissolves the clot that is blocking arterial blood flow and allows for reperfusion to occur. (Capriotti, 2020)." "This information from Davis advantage for pathophysiology: Introductory concepts and clinical perspectives suggests that patients may have success in treating right sided weakness and paralysis by way of physical therapy. "After the ischemic stroke, clopidogrel is an antiplatelet medication that may be used. In some patients aspirin and clopidogrel are used in combination in the first 90 days after the ischemic stroke... Patients may be treated with aspirin to decrease platelet aggregation and clot formation in the acute phase of ischemic stroke (Capriotti, 2021)." While this patient has been prescribed aspirin, she is not confirmed to be in the acute phase of ischemic stroke as it is unknown to when or if this has occurred. This patient has been ordered speech therapy and occupational therapy. The speech therapy will aim to restore speech function for communication and a higher quality of life. The occupational therapy to improve the patient's ability to independently or assisting in her activities of daily living. The patient has been ordered CT, MRI, 2D echo, and chest x ray to improve the understanding of what has occurred and to plan treatment moving forward. The patient is being treated with oxygen therapy continuous nasal cannula to improve oxygen levels. The patient is being treated with insulin injections to improve her blood glucose levels. The patient is receiving ceftriaxone to treat cystitis. The patient has been prescribed aspirin for pain management. The patient is taking heparin to prevent anticoagulation.

Lab Values/Diagnostics

BUN/Creatinine ratio 8 ratio Reference range (12-20 ratio) - This may be abnormal in this patient due to dehydration which may possibly be from a stroke or could also be due to her puree diet since she was not allowed to drink water unless mixed with powder. This patient also has a history of chronic kidney disease which may be indicated by abnormal BUN levels (Hinkle, 2021).

Glucose 108 mg/dL Reference range (70-99 mg/dL) - As her history is inconclusive, I am unable to determine if she has diabetes which would cause elevated glucose levels. Her low level of exercise may cause elevated glucose. Patients with diabetes are prone to cystitis (Hinkle, 2022).

WBC 3.30 10(3) / mL Reference range (4-12 10(3) / mL) - White blood cell counts may also be lowered in people with chronic conditions (Hinkle, 2022). This patient has chronic obstructive pulmonary disease and chronic kidney disease.

Hemoglobin 10.7 g/dL Reference range (12-15.8 g/dL) - Low hemoglobin can be indicative of hypoxia. This may be related to the suspected stroke the patient has experienced (Hinkle, 2022).

Hematocrit 33.8 % Reference range (36-47 %) - Lowered hematocrit can be seen in patients with chronic kidney disease (Hinkle, 2022).

RDW 15.7 % Reference range (11.8 - 15.5 %) - Elevated RDW can be due to anemia which is common in stroke patients.

MPV 8.0 fL (9.7-12.4 fL) - MPV may be low due to stroke (Hinkle, 2022).

Neutrophils 40.4 % Reference range (47 - 73 %) - Neutropenia (low neutrophils) may be caused by "a shift of neutrophils into various tissues (Capriotti, 2020)". This may occur due to infection; the patient has influenza.

Lymphocytes 43.8 % Reference range (18 - 42 %) - Lymphocytes are elevated due to viral infection (Hinkle, 2022). The patient has Influenza which may be causing elevated lymphocytes.

2D echo - To assess the heart. An echocardiogram can detect any blood clots which may have harmed the patient resulting in a stroke. The results were not available yet.

CT - To determine if a stroke has occurred by form of brain damage. The results were not available yet.

Chest Xray - To assess any damage done to the thoracic cavity.

MRI - To evaluate brain tissue revealing if a stroke has occurred.

Admission History

The patient, 57-year-old female, was admitted due to lethargy and suspected stroke. The patient was unable to describe the characteristics, determine the onset, duration, aggravating factors, timing, and severity due to an impaired mental state. The patient describes chest and throat discomfort which is relieved by water and the medication she is receiving.

Medical History

Previous Medical History: Stroke, epilepsy, COPD, hyperlipidemia, chronic kidney disease, urinary tract infection, Influenza.

Prior Hospitalizations: Unable to obtain due to there being no prior records of this patient.

Previous Surgical History: Unable to obtain due to there being no prior records of this patient.

Social History: The patient denies smoking, drinking alcohol, or drug use.

Active Orders

Puree diet - patient is neurologically challenged at this time, there is a risk for choking.

Adult trans thoracic echo 2D - due to suspected stroke

Rhythm strip - to check for abnormal heart rhythm

OT - suspected stroke

SLP - suspected stroke

Oxygen therapy continuous nasal cannula - to increase slightly low oxygen levels

Pulse ox continuous - to monitor oxygen levels

Bladder scan - To detect any abnormalities with the bladder, the patient currently has a UTI as well as a Foley catheter

Cardiac monitoring - Monitoring for any abnormalities with the heart sounds and frequency of beats.

Elevate head of bed to 30 degrees - To prevent aspiration due to risk for choking as evidenced by decreased neurological awareness and musculoskeletal control.

Emergent tele - neurology notification to rule out/determine stroke

For blood sugar 70 mg/dL or less monitor sugar - The patient's current blood sugar is 108 and she is receiving insulin. Insulin decreases the blood sugar which will need to be monitored because if the decrease is too drastic, hypoglycemia may occur.

Insert/maintain indwelling urethral catheter - To drain urine as patient is unable to go to and from the bathroom due to impaired transfer ability.

I/O - to monitor the patient's intake and output of food and fluids to ensure the patient is not retaining too much in the body.

Maintain IV while on telemetry - Possible need for emergent medications or fluids.

Physical Exam/Assessment

General: A&O x2. The patient is alert to person and place, but not time and event. The patient is confused. The patient is in no acute distress. The patient is ungroomed.

Integument: Normal hair color, quantity, and distribution. No rashes, lesions or bruising noted on the skin. No clubbing or cyanosis noted on nails. Capillary refill is less than 3 second bilaterally on upper and lower extremities. Skin turgor returns in < 2 seconds.

HEENT: Head and neck are symmetrical, and trachea is midline. Thyroid is nonpalpable w/ no nodules or lesions present. Sclera is white, conjunctiva is pink, eyelids are moist and pink without lesions, all bilaterally. PERRLA is intact bilaterally, red light reflex present, EOMs are intact. Nasal septum is midline w/ no visible nodules or bleeding. **Rhinorrhea is noted.** Unable to assess mouth as patient was unagreeable.

Cardiovascular: Clear S1 and S2 without murmurs gallops or rubs. PMI palpable at the 5th intercostal space at MCL. Normal rate and rhythm. Pulses 2+ bilaterally.

Respiratory: **Wheezes are heard upon auscultation.** Chest rises and falls evenly with each breath. No labored breathing was noted. **Pulse oxygenation of 93%.**

Genitourinary: No pain or changes in flow and frequency noted. **Patient has foley catheter due impaired transfer ability.**

Gastrointestinal: Bowel sounds are active and there are a normal number of clicks and gurgles, abdomen is soft and tender with no pain noted upon palpation. No bruising, lesions, or rashes noted. **Patient is on a puree diet.**

Musculoskeletal: Left side extremities have normal strength. **Right side arm is flaccid and slightly contracted. Right side leg is diminished. Right hand grips are unable to assess due to flaccidity** and left side hand grips display normal strength. **Pedal pushes and pulls display diminished strength on the right side,** normal strength of the left side.

Neurological: **A&O x2. The patient is alert to person and place, but not time and event. The patient is confused.** PEERLA is intact. **Speech and cognition are impaired.** Patient was assessed using the stroke scale. The patient was able to report her name and birthday. **Patient was unable to state the date or where she lives.** Patient was able to touch her nose with her left thumb. Patient is able to conduct facial movements. Patient has no diminished feeling bilaterally. **Right sided movements are impaired in the lower extremity and flaccid in the upper extremity.** Left sided movements are intact. Patient is able to accomplish picture recognition. **Patient is unable to provide word recognition.**

Most recent VS (include date/time and highlight if abnormal): 11:30 a.m.; temperature: 97.5 F, **O2: 93%,** respirations: 18 per minute, pulse: 97, **blood pressure: 160/88**

Pain and pain scale used: Patient rated pain 0/10 on the numeric pain scale.

<p align="center">Nursing Diagnosis 1</p> <p>Risk for aspiration related to neuromuscular dysfunction as evidenced by patient is on puree diet at this time.</p>	<p align="center">Nursing Diagnosis 2</p> <p>Impaired transfer ability related to suspected stroke as evidenced by right upper extremity flaccid, no movement noted, and right lower extremity decreased movement noted.</p>	<p align="center">Nursing Diagnosis 3</p> <p>Self-care deficit related to decreased range of motion, decrease neurologic status, as evidenced by inability to move right side and decreased cognitive ability shown in her A&O as well as her stroke scale assessment.</p>
<p align="center">Rationale</p> <p>Due to the patient's deficit in cognitive ability and musculoskeletal ability, this patient is at risk for choking.</p>	<p align="center">Rationale</p> <p>The patient's right-side extremities are compromised. If the patient tries to transfer with decreased strength and movement ability, she is at a high risk of falling.</p>	<p align="center">Rationale</p> <p>The patient is unable to complete her self-care needs independently due to decrease movement ability and cognitive ability.</p>
<p align="center">Interventions</p> <p>Intervention 1: Monitor swallowing habits when taking medication by mouth. Intervention 2: Ensure head of bed is above 30 degrees.</p>	<p align="center">Interventions</p> <p>Intervention 1: Complete passive range of motion activities multiple times daily Intervention 2: Monitor skin integrity</p>	<p align="center">Interventions</p> <p>Intervention 1: Supporting and encouraging communication of self-care needs Intervention 2: Education of importance of self-care</p>
<p align="center">Evaluation of Interventions</p> <p>Patient's bed was maintained above 30 degrees.</p>	<p align="center">Evaluation of Interventions</p> <p>The patient will complete range of motion exercises and skin integrity will continue to be monitored.</p>	<p align="center">Evaluation of Interventions</p> <p>The patient will participate in their self-care.</p>

References (3) (APA):

2023 Nurse's Drug Handbook. (2023). . Jones & Bartlett Learning.

Capriotti, T. (2020). *Davis advantage for pathophysiology: Introductory concepts and clinical perspectives* (2nd ed.).

Hinkle, J. L., Overbaugh, K. J., & Cheever, K. H. (2022). *Brunner and Suddarth's textbook of medical-surgical nursing*. Wolters Kluwer.