Caring for a Patient Who Has Suffered a Cerebrovascular Accident

The Medical-Surgical Nursing Certification Board (MSNCB) encourages certification for all registered nurses who provide care in a medical-surgical setting. Initial certification is achieved through successful testing by written examination. MSNCB regularly offers examination for certification in multiple areas across the country. The certification examination is based on Benner’s Nursing Model. Questions on the examination fall within the seven domains of nursing practice: Helping Role, Teaching-Coaching Function, Diagnostic and Patient Monitoring, Effective Management of Rapidly Changing Situations, Administering and Monitoring Therapeutic Interventions and Regimens, Monitoring and Ensuring the Quality of Health Care Practices, and Organizational and Work Role Competencies.

The examination is designed to assess comprehensive knowledge of medical-surgical nursing. The topic of caring for a patient who has suffered a stroke is a part of the comprehensive examination given by MSNCB. The medical-surgical practitioner must understand diseases, diagnoses, and treatment modalities to function as a caregiver and educator. The following scenario and questions offer an example that potential certificants may use to test their knowledge. For more information about MSNCB, visit www.medsurgnurse.org.

Warning Signs
- Sudden numbness or weakness of the face, arm, or leg, especially on one side of the body
- Sudden confusion, trouble speaking or understanding
- Sudden trouble seeing in one or both eyes
- Sudden trouble walking, dizziness, loss of balance or coordination
- Sudden, severe headache with no known cause

Any of these symptoms may be temporary, lasting only a few minutes, and possibly due to a transient ischemic attack (TIA). A TIA is a reversible episode of focal neurological dysfunction that typically lasts a few minutes to a few hours. TIAs are extremely important predictors of stroke and should be considered a medical emergency.

Factors that Increase Risk of Stroke
- Age and gender: Men over age 45 and women over age 55
- History of stroke or family history of stroke
- Blood pressure 140/90 mmHg or higher
- Smoking
- Diabetes
- Total cholesterol 240 mg/dL or higher
- HDL (“good cholesterol”) less than 40 mg/dL
- Physical activity level less than a total of 30 minutes on most days
- Overweight by 20 pounds or more for height and build
- Carotid or other artery disease
- Atrial fibrillation or other heart disease

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Are You Certified?
Certification shows that you have taken that extra step to validate your knowledge and skills. The Academy of Medical-Surgical Nurses (AMSN) and the Medical-Surgical Nursing Certification Board (MSNCB) encourage you to take the time to show your colleagues and patients your commitment to excellence in medical-surgical nursing practice. For more information, visit www.medsurgnurse.org.
Treatment for ischemic stroke is time critical. Education of at-risk patients, early prehospital recognition, rapid assessment, and prompt transport with prearrival notification to a hospital capable of caring for patients with acute stroke are of key importance.

Additional information is available from the American Stroke Association (www.strokeassociation.org) and the American Heart Association (www.americanheart.org).

Case Study

Louise Harris, age 78, is admitted to the medical-surgical unit. She has type 2 diabetes, a history of hypertension and atrial fibrillation, and a colostomy from colon surgery 15 years ago. Her physician writes a DNR order.

Her son, who is with her on admission, reports that they were eating dinner when his mother suddenly slumped back in her chair. When she tried to respond to his question about what was wrong, her speech was garbled. She was only able to move her left arm. She was brought to the hospital by ambulance.

He also states that she has fallen twice within the last month, and has had problems with her memory. She called him on the telephone a few days prior to tell him that she couldn’t remember what to do with her colostomy bag. A recent visit to her primary physician resulted in a diagnosis of a possible TIA.

Mrs. Harris has been taking warfarin (Coumadin®), glipizide (Glucotrol®), and metoprolol (Lopressor®) at home. Her son is concerned that she may not have been taking these medications appropriately or been checking her blood glucose regularly. Repeated systolic blood pressure measurements in the emergency department were greater than 185 mmHg despite treatment.

Her current vital signs are blood pressure 196/112 mmHg, heart rate 82 beats per minute, respiratory rate 18 breaths per minute and regular, and temperature 98.9° F (36.7° C). She is receiving oxygen at 2 liters per minute by nasal cannula; pulse oximetry results indicate 98.9%. Blood glucose is 322 mg/dl and the international normalized ratio (INR) is 2.1. She has a saturation of 94%. Blood pressure measurements in the emergency department were greater than 185 mmHg despite treatment.

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1. What criteria would exclude Mrs. Harris from undergoing fibrinolysis with tissue plasminogen activator (t-PA)?
   a. Blood glucose of 322 mg/dl
   b. INR of 2.1
   c. History of major abdominal surgery
   d. Repeated systolic blood pressure greater than 185 mmHg

2. What statement about t-PA is correct?
   a. It is used to treat hemorrhagic stroke.
   b. It is metabolized in the kidneys.
   c. Administration within 3 hours of onset of symptoms may reopen the occluded cerebral artery.
   d. Determining the type of stroke before administering it is not necessary.

3. The nurse recognizes Mrs. Harris’ symptoms as most indicative of damage to the brain’s:
   a. Temporal lobe.
   b. Left side.
   c. Right side.
   d. Occipital lobe.

4. Mrs. Harris is allowed nothing by mouth until evaluation by the speech therapist. The nurse realizes this is due to her increased risk for:
   a. Bronchitis.
   b. Pleural effusion.
   c. Aspiration.
   d. Pulmonary contusion.

5. How would the nurse assess a patient’s level of consciousness if the patient is suspected of having an acute ischemic stroke?
   a. Wait for the neurologist’s assessment.
   b. Use the Glasgow Coma Scale.
   c. Review the results of the patient’s brain CT scan.
   d. Assess patient response to an intravenous bolus of 50% dextrose.

Answers

1. d – If systolic pressure remains greater than 185 mmHg or diastolic pressure remains greater than 110 mmHg despite repeated measurements, administration of t-PA is contraindicated. The INR and blood glucose results would not exclude t-PA administration. Because major surgery had not occurred within the last 14 days, this also would not exclude t-PA administration.

2. c – To attempt to reopen the occluded cerebral artery, the health care provider must administer t-PA within 3 hours of the onset of symptoms. It is a fibrinolytic drug used to treat acute ischemic stroke and absolutely contraindicated for hemorrhagic stroke because it could worsen the stroke by causing increased bleeding. Therefore, it would be vital to determine the type of stroke before administration. The drug is metabolized in the liver, not the kidneys.

3. b – Right-sided symptoms typically indicate left-brain damage following a CVA.

4. c – Following a CVA, the patient may have swallowing difficulties due to partial paralysis of muscles in the jaw and throat. Aspiration precautions should be implemented until evaluation determines that the patient is able to take food or fluid.

5. b – The Glasgow Coma Scale is a neurologic scale which gives a reliable, objective way to record the conscious state of a person for initial as well as continuing assessment. It is based on eye-opening response, verbal response, and motor response. Reviewing the results of a brain CT scan or waiting for the neurologist’s assessment will not help the nurse ascertain a patient’s consciousness. Assessing the patient’s response to an intravenous bolus of 50% dextrose will only determine the response to treatment and not the level of consciousness.