What is a Stroke?

2 credit hour course

A stroke, otherwise known as a brain attack, occurs when a blood clot develops and blocks flow in a vessel or an artery, or when a blood vessel breaks. When either of these happens, brain cells will begin to die. When brain cells begin to die during a stroke, functions and abilities controlled by that section of the brain are lost. These include functions such as speech, motor function, and memory. What abilities or functions lost greatly depend on the location of the stroke and on its severity (how many brain cells have been lost).

If a person were to have a small stroke, they may experience minor effects such as slight weakness in the arms or legs. A large stroke can paralyze one side of a person's body, or cause them to lose their ability to speak.

WHAT CAUSES A STROKE?

There are two specific types of stroke, one is *ischemic* and the other is *hemorrhagic*. Let's look at both in-depth;

Ischemic Stroke- Ischemic strokes make up nearly 85% of all strokes in the U.S. These types of strokes occur when arteries or blood vessels are blocked by blood clots or plaque. Blood clotting is beneficial, when you have a bleeding wound, clotting works to stop the bleeding. In a stroke however, they can cut off blood flow to the brain, this process is called *ischemia*. There are two ways that a ischemic stroke can occur:

Embolic Stroke- When a person has an embolic stroke, a blood clot forms somewhere in the body and travels through the blood stream to the brain. When it reaches the brain it will eventually find a vessel small enough to cause a clot. This blockage then causes a stroke.

Thrombotic Stroke- In this type of ischemic stroke, blood flow is impaired due to blockage in one or more arteries supplying blood to the brain. The body will look upon these blockages as injuries, or bleeding wounds, so it responds by forming clots.

Hemorrhagic Stroke- Hemorrhagic strokes account for 15% of reported strokes in the U.S., they account for 30% of stroke fatalities. These types of stroke occur when a blood vessel in the brain ruptures, spilling blood into the brain. There are two types of hemorrhagic strokes:

Intracerebral- Hemorrhagic strokes within the brain's tissue.

Subarachnoid- Hemorrhagic strokes around the surface of the brain and under its protective layer.

What are the Symptoms of a Stroke?

The most important thing to remember is that a stroke is a medical emergency; immediate medical treatment can save the person's life and increase the chances of successful rehab and recovery. Listed below are the symptoms that one should be aware of:

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

The following are some of the less common yet important symptoms:

- Sudden nausea (occurs in minutes versus days with a viral illness)
- Sudden fever (see above)
- Sudden vomiting (see above)
- Brief loss of consciousness or decreased consciousness (fainting, confusion, convulsions, coma)

TIA's (Transient Ischemic Attacks)

TIA's are short episodes that can mimic stroke symptoms due to temporary interruptions of blood flow to the brain. The length of the attacks can vary from a few seconds to 24hrs. TIA's are not actual strokes, no brain cells killed, and no brain damage. TIA's however can be warning signs of a stroke to come. Many of the symptoms of a TIA are the same as a stroke:

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

TIA's should **never** be ignored. Close to 10% of all strokes are preceded by TIA's. A person who has had a TIA is at ten time's greater risk for a stroke than someone who has not. Over 33% of people who experience a TIA will go on to have a stroke.

Who is at risk for a Stroke?

The simple truth is there are controllable and uncontrollable risk factors when it comes to stroke. Let's take a look at some of the *uncontrollable* risk factors first.

Age- As one gets older the chances of having a stroke increase. 70% of strokes happen to people over 65 years of age. The chances of a stroke double with each decade past age 55.

Gender- Males have a slightly higher risk than do females. Women in the U.S. tend to live longer in than men; more survivors over 65 are women.

Race- African Americans are at higher risk for strokes than other racial groups. Hispanics are also at higher risk, though not as much as African Americans.

Family History- The risk for stroke and TIA's are greater if there is a family history of either.

Diabetes- A person with diabetes is at an increased risk of having a stroke. This may have something to do to circulation problems that many times are associated with diabetes.

Here are some of the *controllable* factors:

High Blood Pressure- High blood pressure, with healthy diet, exercise, and medication can be controlled. Blood pressure is considered high if it is consistently at 140/90 and above. High blood pressure can lead to hypertension, placing stress on blood vessel walls which can lead to strokes from blood clots or hemorrhages.

Heart Disease (Coronary Heart Disease and High Cholesterol)- High cholesterol levels in the blood greatly increase the risk of stroke by clogging blood vessels, placing people at greater risk for coronary heart disease, also an important stroke risk factor. By maintaining a diet low in cholesterol as well as proper exercise can greatly lower your risk of heart disease, thus also helping to prevent a stroke.

Atrial fibrillation- This type of heart disease can increase the risk of stroke up to six times. Close to 15% of people who have a stroke have atrial fibrillation, or AF. This disease is when the two upper chambers of the heart, called the atria, beat rapidly and unpredictably. This can increase the chance for stroke and heart failure. Doctors use what is called cardioversion, which involves using medication or electricity to get the heart back into a normal rhythm.

DIAGNOSIS

Over 4 million people in the United States have survived a stroke and are living with the after-effects. Stroke survivors, along with their families, can work together to find solutions to problems using patience, creativity, perseverance, and ingenuity.

There is a great deal that we still do not know when it comes to the brain and how it compensates for damage done during a stroke. Over the last decade however we have learned many things. Some brain cells may only be damaged and not lost completely, eventually functioning again. There are also signs that the brain "reorganizes" it's functioning, one region taking over for another that has been damaged.

Some stroke survivors experience miraculous recoveries that simply cannot be explained. Here are the general statistics for stroke survivors:

- 31% of stroke survivors need help caring for themselves
- 20% need help walking
- 16% are institutionalized
- 71% are vocationally impaired after 7 years

Rehabilitation begins in the hospital immediately after a stroke. If the patient is stable, rehabilitation can begin after a few days. Some survivors will remain in the hospital and undergo rehab there, while others will be able to continue their rehab in the comfort of their own home. This is where you as a caregiver enter the picture.

Your Role as a Caregiver

When you first meet the client who has been through and survived a stroke it is very important to develop rapport with them. This can be difficult because strokes will often cause mood changes. If the client is newly dependent, they may have mood or behavior problems. It is important that you be consistent and avoid becoming discouraged. Remember it is the illness that is causing the problems. Find the best way to communicate with the client. Keep it simple, asking yes and no questions whenever possible. Do not treat the client like a child and do not correct their speech. If you need to repeat yourself, do it quietly and calmly. Use gestures if you need to.

The recovery process from a stroke will often be very frustrating for the patient. As a caregiver you must be understanding and patient. Do not let your own frustration show. The client needs positive reinforcement. The speed and degree of recovery are directly related in most cases to the patience and encouragement you give as a caregiver.

Listed below are many of the things that you as a caregiver can do to improve the quality of life for a victim of stroke:

- Work with the client to increase independent mobility. Assist them on their weak side with ambulation. Getting them up and moving is very important for their recovery.
- Assisting with occupational therapy to help them get back into the activities of daily living, such as eating, grooming, dressing, and bathing with little or no assistance.
- Follow the plan of care instituted by the doctor and nurse. This may include:
  Swallowing problems caused by stroke. Thickening agents might be used to help the client swallow liquids.
  Bowel and bladder training with catheter care if needed.
  Pressure ulcer prevention
  If bed-ridden, changing client positions every two hours
  Passive range-of-motion exercises

Applying splints and braces as needed

Remember, you are a vital link in helping the client make a recovery. Always encourage the client to communicate, maintain a positive attitude at all times, be supportive at all times, provide only the assistance the patient needs, and follow the plan of care.

Test Questions

1. Stroke is also known as a _____.
- **A.** Brain attack
- **B.** Super migraine
- **C.** Brain seizure
- **D.** Brain block

2. The two types of stroke are ischemic and _____.
- **A.** Isometric
- **B.** Hemorrhagic
- **C.** Polymeric
- **D.** Holistic

3. 85% of all strokes in the U.S. are _____ strokes.
- **A.** Ischemic
- **B.** Hemorrhagic
- **C.** Thoracic

4. Intracerebral and _____ are the two types of hemorrhagic stroke.
- **A.** Embolic
- **B.** Thrombotic
- **C.** Subarachnoid
- **D.** Polymeric

5. Embolic and _____ are the two types of ischemic stroke.
- **A.** Subarachnoid
- **B.** Thrombotic
- **C.** Intracerebral
- **D.** Thoracic

6. Blockage of arteries or blood vessels indicates a _____ stroke.
- **A.** Hemorrhagic
- **B.** Ischemic
- **C.** Subarachnoid
- **D.** Polymeric

7. Ruptured blood vessels signal a _____ stroke.
- **A.** Ischemic
- **B.** Hemorrhagic

C. Embolic
D. Thrombotic

8. Symptoms of a stroke all include the following except:
A. Sudden confusion
B. Sudden vision trouble
C. Sudden choking
D. Sudden numbness in face, arms, or legs.

9. If you suspect a stroke, it is best to wait 30 minutes before dialing 911. T F

10. TIA stands for _____ Ischemic Attack.
A. Transitional
B. Transient
C. Transparent
D. Translate

11. It is alright to ignore a TIA since they are not a life threatening condition. T F

12. ____% of those who have a TIA will go on to have a stroke.

A. 27%
B. 33%
C. 43%
D. 51%

13. Uncontrollable risk factors for stroke include all the following except:
A. Age
B. Race
C. Gender
D. Weight

14. Controllable risk factors for stroke include all the following except:
A. Heart Disease
B. High Blood Pressure
C. Atrial Fibrillation
D. Blood Type

15. Doctors prefer _____, using medication and electricity to help a heart regain its normal rhythm.

A. Cardiovision
B. Cardioversion
C. Cardio ventilation
D. Cardio denticulation

16. Over 6 million people in the U.S. are stroke survivors living with the aftermath. T F

17. ____% of stroke survivors need help caring for themselves.

A. 20%
B. 16%
C. 31%
D. 71%

18. When you initially meet the client it is vital you establish a good _____ with them.

A. Handshake
B. Rapport
C. Schedule
D. History

19. One thing that you can do to help the quality of life of a stroke victim is:

A. Positive reinforcement
B. Let patient know your frustration
C. Correct their speech
D. Treat them in simple terms, childlike

20. It's ok to be frustrated with the client. Let them know they are acting terrible. T F

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