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Rahel Mitiku
rahel.mitiku@otterbein.edu

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The Pathophysiology Of Acute Ischemic Stroke

Rahel Mitiku, RN, BSN
Otterbein University, Westerville, Ohio

Introduction
There are two types of stroke: hemorrhagic and ischemic stroke. Stroke, or brain attack, is a leading cause of death and disability worldwide (World Health Organization, 2016). The 1st stroke is the sudden onset of decreased blood flow to an area of the brain. This results in the death of brain cells in that area. The 2nd stroke, called a transient ischemic attack (TIA), occurs when a clot or a blood vessel becomes blocked temporarily, but usually, the blood flow is restored and brain damage does not occur. The most common cause of stroke is an arterial blood clot (thrombus) that travels to the brain and obstructs blood flow. Other causes of stroke include bleeding in or around the brain, a congenital or structural abnormality, or an injury.

Pathophysiological Process

Signs and Symptoms

- Headache
- Nausea and vomiting
- Speech difficulties
- Facial weakness
- Arm or leg weakness
- Changes in the level of consciousness
- Confusion
- Trouble speaking
- Dizziness
- Vision changes

Recognizing the symptoms of a stroke is critical to saving lives. The most common cause of stroke is an arterial blood clot (thrombus) that travels to the brain and obstructs blood flow. Other causes of stroke include bleeding in or around the brain, a congenital or structural abnormality, or an injury.

Figure 1. The above information is retrieved from http://www.educatehealth.ca/physician/quick

Significance Of Pathophysiology

- The importance of timely treatment to minimize ischemic tissue damage.
- The urgency to treat acute ischemic stroke is comparable with acute myocardial infarction (MI) in hospitals. Both require rapid medical management which is necessary to restore normal cerebral blood flow to brain tissue or to reduce permanent tissue damage. Pathophysiology is significant in infarct brain tissue level.
- The process of recognizing and symptoms of AIS and the timely treatment will reduce the devastating effects. Multicenter explained that as cited by Pons et al. (2014), AIS has an urgent management strategy convinced by rindufatal risk factors including hypertension, diabetes mellitus (DM), high blood cholesterol, smoking, obesity, race, and age (Pons et al., 2014).

The stroke is a disease of the brain that occurs when brain tissue is deprived of oxygen and nutrients.

Understanding Underlying Pathophysiology

The underlying pathophysiology of stroke is a multifactorial process that involves a complex interplay of factors including arterial occlusion, thrombus formation, and downstream consequences leading to cell death.

- Elevated blood pressure
- Platelet aggregation
- Arterial plaque rupture
- Intracranial artery
tissue damage

The brain is the most complex organ in the body, and any interruption of blood flow to it can cause serious damage. The symptoms of stroke can be divided into two main categories: acute ischemic stroke and hemorrhagic stroke.

Figure 2. Retrieved from http://translationalstroke.org

Preventing and Managing Stroke

- Antithrombotic therapy
- Anticoagulation
- Aspirin
- Platelet inhibitors
- Thrombolytic therapy

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