

Brief Note on Brain Ischemia

Saeed Altahan*

Department of Internal Medicine, Arab Medical Center and Khalidi Hospital, Amman, Jordan

Corresponding Author*

Saeed Altahan,
Department of Internal Medicine,
Arab Medical Center and Khalidi Hospital,
Amman, Jordan
E-mail: Altahansaeed@gmail.com

Copyright: © 2021 Altahan S. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Received date: October 01, 2021; **Accepted date:** October 15, 2021; **Published date:** October 22, 2021

Description

Brain ischemia is also called as cerebral ischemia or cerebrovascular ischemia. It occurs when there is an inadequate amount of blood flow to the brain. Vital nutrients and oxygen are passed in the blood through arteries. Arteries are the blood vessels which carry oxygen and nutrient-rich blood to every part of the body.

The arteries that deliver blood to the brain follow a particular pathway that ensures each section of the brain is sufficiently supplied with blood from one or more arteries. When an artery in the brain becomes blocked or bleeds, this leads to a lower oxygen supply to the region of the brain that relies on that particular artery. Even an impermanent shortage in oxygen supply can damage the function of the oxygen-deprived region of the brain. Even severe damage can occur, if the brain cells are deprived of oxygen for more than a few minutes, which may result in the death of the brain tissue. This brain tissue death is also known as a cerebral infarction or ischemic stroke.

The symptoms of brain ischemia vary from mild to severe. They can survive from a few seconds to a few minutes. If the ischemia is short-lived and resolves before permanently damaged can occur, then the event is often stated as a Transient Ischemic Attack (TIA).

If the brain becomes injured as a result of ischemia, the signs may become permanent. Symptoms of brain ischemia include the following

- Body weakness on one or both sides of the body
- Loss of sensation
- Confusion or disorientation

- Changes in vision of one or both eyes
- Dizziness
- Double vision
- Indistinct speech
- Loss or decreased of consciousness
- Balance problems and problems with coordination
- Prevention and Treatment

The treatment of brain ischemia comprises a number of medications that are used for the treatment and prevention of ischemic stroke.

Avoidance of brain ischemia includes medications that can help you achieve your perfect blood pressure, as well as medications for dropping levels of cholesterol and fat in the blood. Dietary alteration can also aid in achieving ideal cholesterol levels.

Treatment for unexpected ischemia includes the intravenous medication alteplase (tPA). When managed within three hours of diagnosis, this emergency treatment has been shown to recover the medical result after a stroke. Sometimes, after stroke symptoms start, tPA can be given up to 4.5 hours.

Due to the loss of oxygen and substrate in brain ischemia, the brain cannot perform aerobic metabolism. The brain is not able to change to anaerobic metabolism and, the levels of adenosine triphosphate (ATP) drop rapidly because it does not have any long term energy stored, approaching zero within 4 minutes. Cells begin to lose the ability to maintain electrochemical gradients in the absence of biochemical energy. So, there is a huge influx of calcium into the cytosol, a massive discharge of glutamate from synaptic vesicles, lipolysis, calpain initiation, and the arrest of protein synthesis. Moreover, subtraction of metabolic wastes is slowed. The disruption of blood flow for twenty seconds can stop the electrical activity inside our brain.

Conclusion

This drug reinstates blood flow by dissolving the blood clot leading the stroke. There are also emergency endovascular actions in which doctors easily treat the blocked blood vessel. Sometimes, after a stroke, survivors are at higher risk of emerging post-stroke seizures. Anti-seizure medications can help prevent some post-stroke seizures and can also regulate post-stroke seizures if they do develop.