

Simple term stroke essay sample



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A stroke—also called a cerebrovascular accident (CVA) or a brain attack—is an injury to the blood vessels of the brain that causes neurological malfunctioning. In the United States, as many as 87% of all strokes are caused by the sudden blockage of a cerebral artery. The resulting decrease in blood flow leads to ischemic damage in the region of the brain that is fed by the artery. These CVAs are called ischemic strokes. Most ischemic strokes are due to blood clots.

The remaining 13% of strokes are caused by the rupture of blood vessels or aneurysms and subsequent bleeding into the brain or the subarachnoid space surrounding the brain. These CVAs are called hemorrhagic strokes.

Both types of vascular damage—clots and ruptured vessels—can also occur in the spinal cord, and neurologists often call these spinal cord strokes. The simple term stroke, however, generally refers to vascular damage to the brain.

Ischemic strokes typically give specific (focal), painless neurological symptoms. Common stroke symptoms include:

Numbness or weakness on one side of the body

Confusion, difficulty speaking, or difficulty understanding Difficulty seeing

Difficulty walking

Severe headache with no known cause (NINDS, 2010)

Besides the specificity of the neurological deficits, another characteristic of stroke is that its symptoms show up suddenly. Thus, a stroke is defined as the abrupt appearance of focal neurological deficits that are caused by damage to blood vessels of the brain (Crocco et al., 2009).

STROKE

A stroke is the sudden appearance of neurological problems caused by injury to or blockage of blood vessels. Strokes typically change a person's ability to move, feel, talk, or understand.

TIA

A TIA, or transient ischemic attack, is the sudden appearance of stroke symptoms that are transitory and that are not accompanied by detectable tissue damage (Easton et al., 2009).

This definition of TIA is new. Previously, the definition was based only on the apparent reversibility of the TIA's neurologic symptom. The complication posed by the old definition is that, even when their neurologic symptoms disappear, some people are left with brain damage. Had these people been treated as stroke victims, in some cases, their brain damage could have been reduced. To ensure that even small strokes are considered for treatment, any acute brain damage of vascular origin is now considered a stroke.

Using the new, more limited definition of TIA, neurologists are pushed to search for evidence of acute infarction when confronted with a possible TIA. The goal is to have more small strokes recognized and treated (Kistler et al., 2009a).

Stroke is a serious health hazard. A recent study of Americans found that “ 25% of people who had a stroke died within a year and 8% had another

stroke within a year... . [Altogether,] 50% died or had another stroke or a heart attack within four years” (Feng, 2010).

Stroke is also an economic drain. The American Heart Association estimates that stroke will cost the United States about \$74 billion in 2010, including the cost of healthcare services, drugs, and lost productivity (Lloyd-Jones et al., 2010).

The morbidity, mortality, and cost of strokes are not spread equally among the population. Stroke is largely a disease of the elderly, and it strikes African Americans harder than other ethnic groups. Following are some numerical characterizations of the impact of stroke in the United States.

Briefly, an ischaemic stroke prevents oxygen exchange and glucose supply to neurons which in turn prevents energy (ATP) from being produced.

Because ATP is ordinarily needed to maintain a proper resting membrane potential, loss of ATP production is therefore followed by loss of the membrane potential, leading to depolarization and increased permeability to extracellular ions. An uncontrolled influx of calcium ions is devastating to a neuron and will initiate cascades that result in ‘programmed cell death’ – also referred to as ‘apoptosis’.

Free-radicals called ‘reactive oxygen species’ (ROS) are also generated inside the cell (by the same organelle that generates ATP). These attack DNA, protein, and inactivate/activate enzymes involved in the apoptotic cascade. Because the cells depolarize, they also release their neurotransmitter contents which can lead to a build-up of extracellular glutamate and secondary damage via uncontrolled neuron firing.

The Brain

FRONTAL

- * Reasoning and judgment

* PARIETAL

- * Motor/sensory for opposite side

* CEREBELLUM

- * Balance/posture

* BRAINSTEM

- * Medulla controls respirations and heart rate

Brain Function

Regulatory center

- * Integrates and controls body functions

- * Sensation

- * Interprets sensory perceptions

- * Seat of Consciousness

- * Awareness of self and surroundings

DRUGS

The types of medicines that prevent clotting are:

Recommended Related to Stroke

How Atherosclerosis Causes Half of All Strokes

Having a stroke is one of the most frightening prospects of aging. Strokes can come on suddenly, stealing the use of an arm or the ability to speak. A stroke can be fatal or leave us permanently disabled. About half of all

strokes are caused by atherosclerosis — the same process of narrowing and hardening of the arteries that causes heart attacks. Atherosclerosis progresses silently, without symptoms, putting our brains and our independence at risk. Reducing the risk factors for atherosclerosis... *

Antiplatelet medicines.

* Anticoagulant medicines.

Cholesterol-lowering and blood-pressure-lowering medicines are also used to prevent TIAs and strokes. Antiplatelet medicines Antiplatelet medicines keep platelets in the blood from sticking together. * Aspirin (for example, Bayer) is most often used to prevent TIAs and strokes. * Aspirin combined with dipyridamole (Aggrenox) is a safe and effective alternative to aspirin. * Clopidogrel (Plavix) may be used for people who cannot take aspirin.

Anticoagulants

Anticoagulants prevent blood clots from forming and keep existing blood clots from getting bigger. If you have atrial fibrillation, you will probably take an anticoagulant such as warfarin (for example, Coumadin). For more information, see the topic Atrial Fibrillation. Statins

Statins lower cholesterol and can greatly reduce the risk of stroke in people who have had a TIA. Statins even protect against stroke in people who do not have heart disease or high cholesterol. 2 Blood pressure medicines

If you have high blood pressure, your doctor may want you to take medicines to lower it. Blood pressure medicines include: * Angiotensin II receptor blockers (ARBs).

* Angiotensin-converting enzyme (ACE) inhibitors.

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- * Beta-blockers.
- * Calcium channel blockers.
- * Diuretics.

Cerebral Circulation

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Pathophysiology

Stroke occurs when there is an interruption in blood flow to the brain due to obstruction or rupture of an artery supplying blood to the brain tissue.

Without blood supply, brain tissue begins to die in 4 minutes 1Signs and symptoms of a stroke depend on what part of the brain is affected.

Stroke

- * Ischemic (lack of blood flow)
- * Thrombotic
- * Embolic
- * Hemorrhagic
- * Intracerebral (within the brain)

Subarachnoid (between the brain and skull)