STROKE

Stroke is a medical condition that occurs when the supply of blood to an area of the brain is interrupted. It is the third most common cause of death in the USA, accounting for one in every sixteen deaths, and a leading cause of death and disability around the world. It is particularly common in black populations, where it is linked to untreated hypertension. The purpose of this article is to provide an overview of the causes, clinical features, treatment and consequences of this frequently occurring but devastating medical condition. The ultimate goal is to draw attention to the fact that, with sensible precautions, this illness can be successfully prevented.

There are two major types of strokes. One form occurs when a clot forms inside a blood vessel and prevents blood from flowing to a part of the brain. This form of stroke is called an ischemic stroke. This clot may form at the site of obstruction or maybe formed more proximally in the heart or elsewhere in the circulation and then travel in the blood stream to the site where it causes obstruction of blood flow. Alternatively, a blood vessel can have its wall disrupted, resulting in blood leaking out of the vessel and into surrounding brain tissue. This latter form of stroke is called a hemorrhagic stroke. Ischemic strokes are much more common than hemorrhagic strokes, occurring about 87 % of the time while hemorrhagic strokes make up 13 % of strokes.

Because a human brain is organized like a powerful computer with different locations in the brain responsible for different bodily functions, interruption of blood flow to any one location can produce a characteristic abnormality or combination of abnormalities. The resulting symptoms can allow a physician determine the part of the brain most likely involved. It is extremely important for people to have some awareness of the symptoms of a stroke since immediately activating the emergency response system by dialing 911 can result in prompt transfer to a hospital where lifesaving and disability minimizing treatments can be administered. Prominent symptoms of stroke to be aware of include arm or leg weakness, partial paralysis of the face, and difficulty speaking. Other symptoms include visual loss, seeing double, numbness of extremities, and dizziness that does not appear to be related to changing position. All of these aforementioned symptoms are more commonly associated with ischemic strokes, while hemorrhagic strokes may have more dramatic symptoms such as severe headache, nausea, vomiting, extremely high blood pressure, and unconsciousness.

Transient Ischemic Attack (TIA) is a condition characterized by a focal deficit such as extremity weakness, loss of vision or other function, which resolves completely within one hour of onset, and in which subsequent brain imaging (MRI) does not show any evidence of stroke. TIA’s are very important warning symptoms of an impending stroke, and as many as 20 % of people who experience a TIA go on to have a stroke within ninety days of the TIA. In fact, almost half of the people who will subsequently have a stroke do so within the following 48 hours. Therefore anyone who experiences a TIA should call 911 or go straight to the emergency department to be further evaluated and hospitalized.

Evaluation of a patient with symptoms of possible stroke in the emergency department involves blood tests, special x-rays of the brain called CT scans and MRI’s, an electrocardiogram to check for heart beat irregularities, and other specialized tests, as indicated by the findings on initial evaluation. Because it is now possible to dissolve a clot with a special medication called a thrombolytic, the emergency room doctor tries to get a CT scan of the head as quickly as possible after a patient arrives, in order to make sure that the patients stroke is not a hemorrhagic stroke that will be made worse by the clot buster drug (thrombolytic). The goal for any ischemic stroke patient is to administer the thrombolytic drug within three hours of the onset of symptoms. In general, the longer it takes to administer the thrombolytic, the greater the damage to brain tissue, and the greater the risk of severe disability or death.

One of the most important things to understand about strokes is that they can be prevented if certain precautions are followed as early as possible in the life of a person who will ultimately develop a stroke. The

medical term for things that make us more prone to a disease is “risk factors”. Risk factors are a combination of genetic predispositions and environmental and life style related issues. One of the most important risk factors is high blood pressure, which coincidentally, occurs in epidemic proportions in black populations around the world. It is particularly problematic because it is associated with few symptoms for many years before it results in stroke or other catastrophic medical complications. Regular blood pressure checks by your primary care doctor, as well as prompt treatment when it is diagnosed, and a commitment by patients to take their medications regularly, are the only way to avoid complications such as stroke. Other important risk factors include diabetes mellitus, and elevated cholesterol and other lipid levels. All three risk factors are related to a life style of high fat and calorie intake, little exercise, obesity, excessive alcohol and drug consumption, and failure to get regular medical checkups. If we can modify these risk factors in the black population, we can significantly reduce the risk of stroke with its attendant severe morbidity and mortality.

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