English Summary

A cerebral stroke is an acute neurological deficit in which the blood supply to a part of the brain is interrupted also known as cerebrovascular accident (CVA). A stroke involves the sudden loss of neuronal function due to disturbance in cerebral perfusion. This disturbance in perfusion is commonly arterial, but can be venous.

Strokes can be classified into two major categories: ischemic and hemorrhagic stroke. In an ischemic stroke, which is the cause of approximately 80% of strokes, a blood vessel becomes occluded and the blood supply to part of the brain is totally or partially blocked. Ischemic stroke is commonly divided into thrombotic stroke, embolic stroke, and systemic hypoperfusion.

Cerebral stroke affects the brain of almost a half million people every year, causing 150,000 deaths, and now there are approximately 3 millions stroke survivors in the United States.

Stroke is the leading cause of serious disability and accounts for approximately half of the patients hospitalized for acute neurological diseases. Among long term stroke survivors, 48% have hemi paresis 22% cannot walk, 24% to 35% are completely dependent for normal daily activities, 12% are aphasic 32% are clinically depressed. The average health care cost in United States exceeds $10 billion annually.

Quantitative tomography maps of cerebral blood flow (CBF), cerebral blood volume (CBV) cerebral metabolic rate of oxygen (CMRO), brain glucose utilization (CMRglu), intracellular PH in human can be measured by positron emission tomography (PET). Cerebral blood

flow in man is about 50 ml/100g of brain /min. Using (PET) it has been shown that CBF, CBV CMTO2, CMRglu are all coupled and higher in gray matter than in white matter. In normal resting brain CBF is a reflecting of CMRO2. With advanced age there is a reduction in CBF, CBV, and CMRglu.

The pathologic entity of stroke differs according to the etiologic factor whether it is due to decreased circulation to the brain (infarction) or due to cerebral hemorrhage, the former produces brain injury from ischemic necrosis, while the later cause brain damage by compression necrosis and vascular disruption.

Better understanding and management of stroke risk factors will undoubtedly improve our ability to prevent first and recurrent stroke. A lack of primary prevention programs has been proposed as an explanation for the high stroke rates.

Risk factors for first stroke can be classified into modifiable risk factors and non modifiable risk factors. Whereas nonmodifiable risk factors are inherent in a particular individual, modifiable risk factors have the potential to be controlled or eliminated through lifestyle changes or by medical intervention.

Ischemic strokes account for about 80% of cerebral strokes and it is classified clinically to the following: lacunar infarction, large artery diseases and cardioembolic syndromes.

The clinical presentation of spontaneous ICH varies from a relatively asymptomatic disease to a catastrophic rapidly fatal stroke. Such clinical presentation depends largely on size and location of

hemorrhage, but some features are common to all anatomic forms of spontaneous ICH as they reflect the elevated ICP that is commonly presents in this form of stroke.

Stroke is diagnosed through several techniques: a neurological examination, blood tests, CT scan (with and without contrast enhancements) or MRI scan, Doppler ultrasound, and arteriography. For detecting hemorrhages, MRI scan is better**.**

Investigations of underlying etiology if a stroke is confirmed on imaging, various other studies may be performed to determine whether there is a peripheral source of emboli An ultrasound\ Doppler study of the carotid arteries, an echocardiography to identify arrhythmias and an angiogram of the cerebral vasculature if a bleed is thought to have originated from an aneurysm or arteriovenous malformation.

It is important to identify stroke as early as possible because patients who are treated earlier are more likely to survive and have better recoveries.

The initial management of a patient suspected of having an acute stroke includes protecting the air way, assuring adequate ventilation and oxygenation and stabilizing cardiovascular function. Check vital signs (pulse, respiration, blood pressure and temperature) frequently to detect abnormalities and changes.

As ischemic stroke is due to a thrombus (blood clot) occluding a cerebral artery, the patient is given antiplatlet medications (aspirin, clopidogrel, dipyridamol), or anticoagulant medication (warfarin) depending on the cause, when this type of stroke has been found. If

studies show carotid stenosis, and the patient has residual function in the affected side, carotid endarterectomy may decrease the risk of recurrence.

Thrombosis of the venous channels in the brain is an uncommon cause of cerebral infarction relative to arterial disease but is an important consideration because of its potential morbidity. Venous thrombosis may occur with headache and cranial nerve palsies. Newer imaging procedures have led to easier recognition of venous sinus thrombosis, offering the opportunity for early therapeutic measures. Venous thrombosis also may be associated with other medical complications that require therapeutic intervention.

Whether ICH is best managed surgically or medically remains a subject of considerable debate. Regardless of which therapy is chosen, the goal is improvement in function, an objective that based on the concept of a penumbra around ICH. Surgical management includes: craniotomy, EVD, endoscopy, and stereotactic aspiration**.**

It was fond that the ultimate outcome differs according to the subtype of stroke and is also influenced by the patient’s co existing morbidities. Mortalities, worsening, stroke recurrence, functional disabilities and decrease quality of life; these are outcomes of great importance to patients and physician.