

# Stroke

## I. Definition:

- a. Stroke or brain infarction (death of some brain cells) is a condition characterized by permanent injury to the brain that results in a neurological problem often manifested by one or more clinical findings including decreased mental function, abnormal speech, impaired movement of limbs and visual problems.

## II. Background facts:

- a. Stroke is the third-leading cause of death in the United States, accounting for more than 150,000 deaths per year.
- b. Stroke is the leading cause of disability in the United States. It is estimated that more than 3 million Americans are stroke survivors in a dynamic pool of people. This illness places enormous burdens on family members and caretakers.
- c. Transient ischemic episodes (TIA's) are episodes of focal neurological (nerve cell related) dysfunction resulting from the reversible impairment of brain blood flow. These attacks usually last minutes or hours, then gradually resolve. However, in 30% of cases, such TIA's are precursors to permanent stroke. This situation is a warning sign! Therefore, seek immediate physician help, if this condition is suspected.

## III. Associated risk factors

- a. Hypertension
- b. Hyperlipidemia
- c. Tobacco smoking
- d. Diabetes (elevated blood sugar)
- e. Atrial Fibrillation (heart arrhythmia)
- f. Asymptomatic significant carotid artery (neck artery) obstruction

## IV. Causes

- a. Stroke has three main causes:
  - Ischemic – arteriosclerosis of carotid arteries or their artery branches within brain leading to decreased blood flow to the brain.

- Embolic – blood clots particulars migrating from the heart or aorta traveling to the brain and lodging there
- Hemorrhagic- bleeding from a predisposed abnormal brain artery into brain tissues.

V. Signs and Symptoms

- a. TIA's
- b. Difficulty with speech
- c. Arm or leg weakness or paralysis (often on one side of body)
- d. Numbness or tingling in a limb
- e. Visual disturbances
- f. Depression

VI Early Screening Tests

- a. physician's examination – listen in neck artery for “carotid bruits” (certain sounds)
- b. carotid ultrasound – Check for carotid artery obstructions and/ or ulcerations
- c. electrocardiogram – check for arrhythmia as a source of emboli (atrial fibrillation)

VII. Diagnosis

- a. Carotid angiogram (Gold standard)
- b. Magnetic resonance angiogram (less invasive)
- c. Computerized axial tomography (CAT scan)

VIII. Treatment

- d. Early clot buster- thrombolytic therapy (within hours of stroke)
- e. Good supportive medical care
- f. Rehabilitation management
- g. Physical therapy