



## A REVIEW ARTICLE ON RISK FACTORS, CLINICAL MANIFESTATIONS, DIAGNOSIS & GENERAL MANAGEMENT OF STROKE DISEASE

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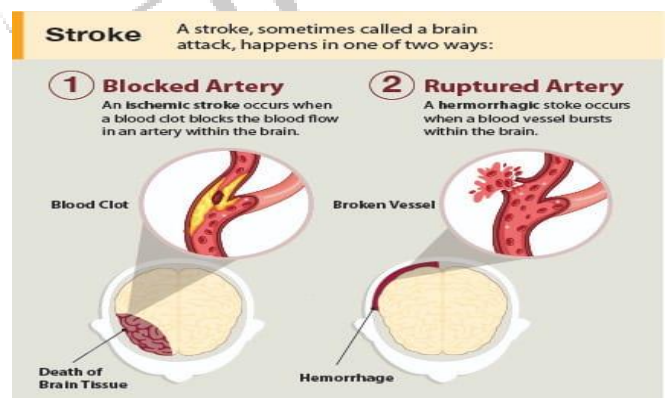
### ABSTRACT:

STROKE is the second leading cause of death and disability worldwide. The prevalence of stroke is highest in developing countries and ischemic stroke is of most common. 1 in every 4 individuals getting affected by stroke, and the major cause is the blockage of arteries that carries oxygen to the brain and high blood pressure. It is three types ischemic stroke, hemorrhagic stroke, and TIA. Stroke management primarily focuses on restoring blood flow to the brain and treating stroke-induced neurological damage.

### KEYWORDS:

Stroke, blood pressure, ischemic stroke, hemorrhage stroke, tPA, rehabilitation.

high blood pressure. This decreases the oxygen and nutrients to the brain which causes brain cells to die within a few minutes. This can cause brain damage, long-term disability, and even death. So stroke is a medical emergency



### INTRODUCTION:

DEFINITION: STROKE is a neurological disorder. It is also known as a CEREBROVASCULAR ATTACK. It is caused when blood flow to the brain gets decreased due to blockage in arteries that carry blood to the brain or due to rupture of arteries in the brain due to

## EPIDEMIOLOGY:

Stroke is the second most common cause of death & third most common cause of disability worldwide.

Globally 68% of all strokes are ischemic & 32% are hemorrhagic

1 in 4 was affected by stroke.

80% of strokes are preventable if addressed early.

## TYPES:

The brain controls our movements, stores memory, and is a source of emotions, thoughts, and language.

Our brain needs oxygen to perform the above-listed functions. To the brain, oxygen was delivered by the arteries (carotid arteries and their divisions) if something (sclerosis) block the flow of blood to the brain this cause brain cell to die within a minute due to lack of oxygen (ISCHEMIC STROKE)

## HEMORRHAGIC STROKE

When the arteries that carry oxygen to the brain get ruptured due to high blood pressure, it leaks the blood into the brain. The leaked blood damages the brain by causing pressure.

## TIA

It is a warning sign of a future stroke so a medical emergency is required.

Ischemic stroke at blood clots causes TIA.

## CAUSES & RISK FACTORS:

### Unmodifiable

**Age:** 55 or older has a high risk for stroke.

**Gender:** men have a higher risk of affecting with stroke than women.

**Race:** black Americans have a higher prevalence of stroke and the highest death rate from stroke than any other racial group.

**Family history/genetics:** people with a family history of stroke are likely to share common environments that increase their risk.

## Modifiable

**Hypertension:** It is one of the major risk factors for stroke. If BP was 160/90mmhg frequently and has a history of HTN there is a 54% risk of affecting with stroke.

**Diabetes** doubles the risk of stroke, and people with diabetes affected by stroke have higher rates of severe disability and slower recovery.

**Hyperlipidemia:** High levels of Total cholesterol and LDL are one of the risk factors for stroke.

**Smoking:** Tobacco smoking increases the risk of stroke. Tobacco smokers have twice the chance of suffering from a stroke as non-smokers.

**Alcohol and drug abuse:** High consumption of alcohol may increase the risk of hemorrhagic stroke by elevating blood pressure and also regular use of illegitimate substances such as cocaine, heroin, cannabis, and lysergic acid increase the risk of stroke.

**Atrial fibrillation (AF)** is an important risk factor that concedes 15% of all strokes and causes severe disability and higher mortality.

Insufficient physical inactivity and poor diet are associated with an increased risk of stroke.

## PATHOPHYSIOLOGY:

A stroke occurs when the blood flow to an area of the brain is interrupted due to atherosclerosis formed due to predisposing factors (age, gender, heredity) & precipitating factors (hypertension, high cholesterol, physical activity, smoking) which cause the buildup of plaque deposits in walls of blood vessels. So due to blockage there is decreasing in the supply of oxygen and nutrients to the brain which causes cerebral hypoperfusion, which in turn causes tissue hypoxia and cellular starvation (cell death) – cerebral ischemia.

High blood pressure and weakened blood vessels make blood vessels rupture & bleed into the surrounding brain. The blood accumulates and compresses the surrounding brain tissue – hemorrhagic stroke.

## CLINICAL MANIFESTATIONS:

### [BE FAST]

**B- BALANCE** [loss of balance]

**E-EYES** [ blurred vision /vision loss in one or both eyes]

**F- FACE** [ one side of the face drooping]

**A-ARM** [ arm or leg weakness]

**S-SPEECH** [slurred speech]

**T-TIME** [if you absorb the any of above symptoms call immediately 911]

Other symptoms include

loss of consciousness, seizures, memory loss, and headaches.

## DIAGNOSIS:

**CT SCAN**(computerized tomography)It makes a series of X-rays and the computer produces 3D images of soft tissues and bones

**CBP**(complete blood picture)to know the clotting ability, blood sugar levels, and infections.

**ECG**(electrocardiogram)to confirm that the heart issue is not the cause of the problem.

**MRI**(magnetic resonance imaging)can use to create clear images of the structures inside the brain.

**EEG**(electroencephalography) is a test that measures electrical activity in the brain.

Other tests include troponin, prothrombin time & international normalized ratio.

## COMPLICATIONS:

- Paralysis or loss of muscle movement
- Difficulty in talking or swallowing
- Memory loss or thinking difficulties
- Emotional problems
- Pain
- Changes in behavior and self-care

## MANAGEMENT:

The management of stroke can be done through medicines, surgery, and rehabilitation.

Acute treatments for ischemic stroke are medicines;

tPA(tissue plasminogen activator) to dissolve the clots in the brain. You can only give this medicine within 4 hours when symptoms was observed. Examples: alteplase, reteplase, and Tenecteplase.

**ANTIPLATELETS** are used to stop the platelets from clumping together to form blood clots. Examples: aspirin and clopidogrel.

**ANTICOAGULANTS**are also known as blood thinners that decrease the blood's ability to form a clot by increasing clotting time. Examples: heparin, warfarin, enoxaparin, dabigatran.

**Treatment for hemorrhagic stroke:**



### Stroke

To recognize the warning signs of stroke, remember to think **FAST**.

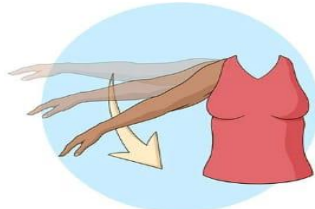
#### F is for face.

Ask the person to smile. Look for a droop on one or both sides of the face.



#### A is for arm.

Ask the person to raise their arms. Look for one arm to drop downward.



#### S is for speech.

Ask the person to speak. Listen for slurred speech or trouble choosing words.



#### T is for time.

Call 911 immediately. Look at the time so you can tell medical personnel when symptoms started.



Emergency treatment of hemorrhagic stroke focuses on controlling bleeding and reducing intracranial pressure and blood pressure (by giving anti-hypertensive drugs) and spasms of blood vessels and preventing seizures.

**SURGERY:** If the area of bleeding is large doctor may perform surgery to remove the blood and relieve blood pressure in the brain.

In case of an aneurysm surgeon place, a tiny clamp at the base of the aneurysm to stop blood flow to it. This clamp can keep an aneurysm from bursting, or it can keep an aneurysm that was recently hemorrhaged from bleeding again this is also known as SURGICAL CLIPPING.

**REHABILITATION:** After the treatment, stroke care focuses on helping the patient to recover as much function as possible and return to independent living. The impact of stroke depends on the area of the brain involved and the amount of tissue damaged.

**PREVENTION:** If you are at risk of having a stroke or to prevent recurrent stroke you can make some healthy lifestyle changes they are

- Eating a healthy diet
- Aiming for healthy weight
- Managing your blood pressure, sugar levels, and cholesterol levels
- Getting regular physical activity
- Managing stress
- Quitting smoking and alcohol if habituated
- By taking your medications regularly as prescribed by the physician
- Regular health checkups to screen for BP, and DM might reduce the risk of developing stroke in the future.

## CONCLUSION:

Stroke is one of the most prevalent diseases in recent years and one of the major causes of death and disability globally. 80% of strokes are ischemic and the remaining of hemorrhagic. Most strokes can be prevented if they are treated in time and some by lifestyle modifications. The diagnosis depends on the clinical manifestations. Nowadays management of ischemic stroke has been highly advanced and to prevent recurrent

attack medication adherence is very important. Rehabilitation and family support are very important to the stroke patient with a disability.

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