9th ACS 2025

cardiocare MULTISPECIALTY HOSPITAL
The Limi Hospitals

Stroke

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Limi Children's Hospital
The Limi Hospitals

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MULTISPECIALTY HOSPITAL

Everyone does not need to go abroad for advanced Cardiovascular healthcare.

World Class HealthCare.
All Subspecialties. All Day, Every Day.

Outline- What, Why, How, When…

1. What?

- What is it?

2. Why?

- Why should we care?

3. How to See?

- How we recognize and evaluate

4. When & How to Treat/Refer?

- Appropriate Care

What is Stroke?

Introduction

FOUNDED SINCE 1982

TO SUPPORT & SERVE

What is Stroke?

WHO & Council of the American Heart Association/American Stroke Association

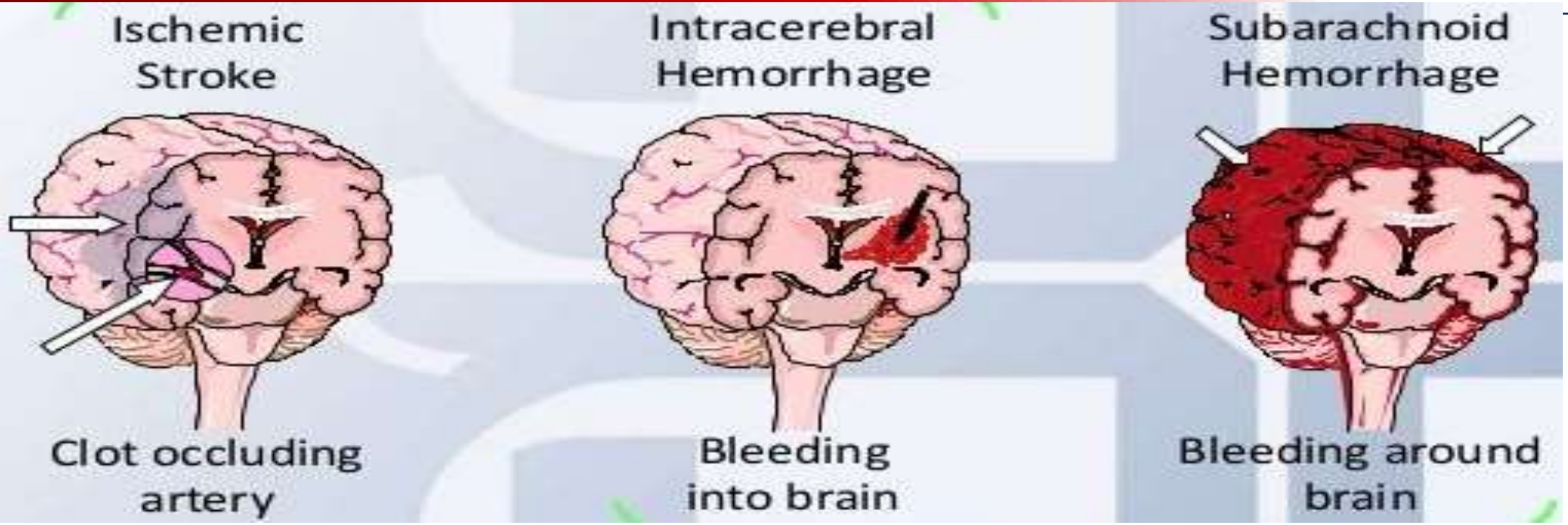
- A Clinical syndrome
- Sudden or rapidly developing clinical signs
- Focal (or global in case of coma) disturbance of cerebral function
- Lasting for more than 24 hours or leading to death
- With no apparent cause other than a vascular origin
- Typically supported by:
  - neuro-pathological,
  - neuro-imaging, and/or
  - clinical evidence of permanent injury

What is Stroke? T.I.A

- Transient Ischemic Attack (TIA) is a
  - brief episode of neurological dysfunction
  - due to temporary focal, cerebral or retinal ischaemia
  - without any objective evidence of infarction,
  - usually lasting seconds or minutes with complete recovery

- The time of < 24 hours is no longer in use

What is Stroke? Classification



1. Ischemic stroke *(Clot occluding artery in the brain)*
2. Hemorrhagic stroke *(Bleeding into the brain)*
3. Subarachnoid Hemorrhage *(Bleeding around the brain)*

Founded since 1982 to Support and Serve

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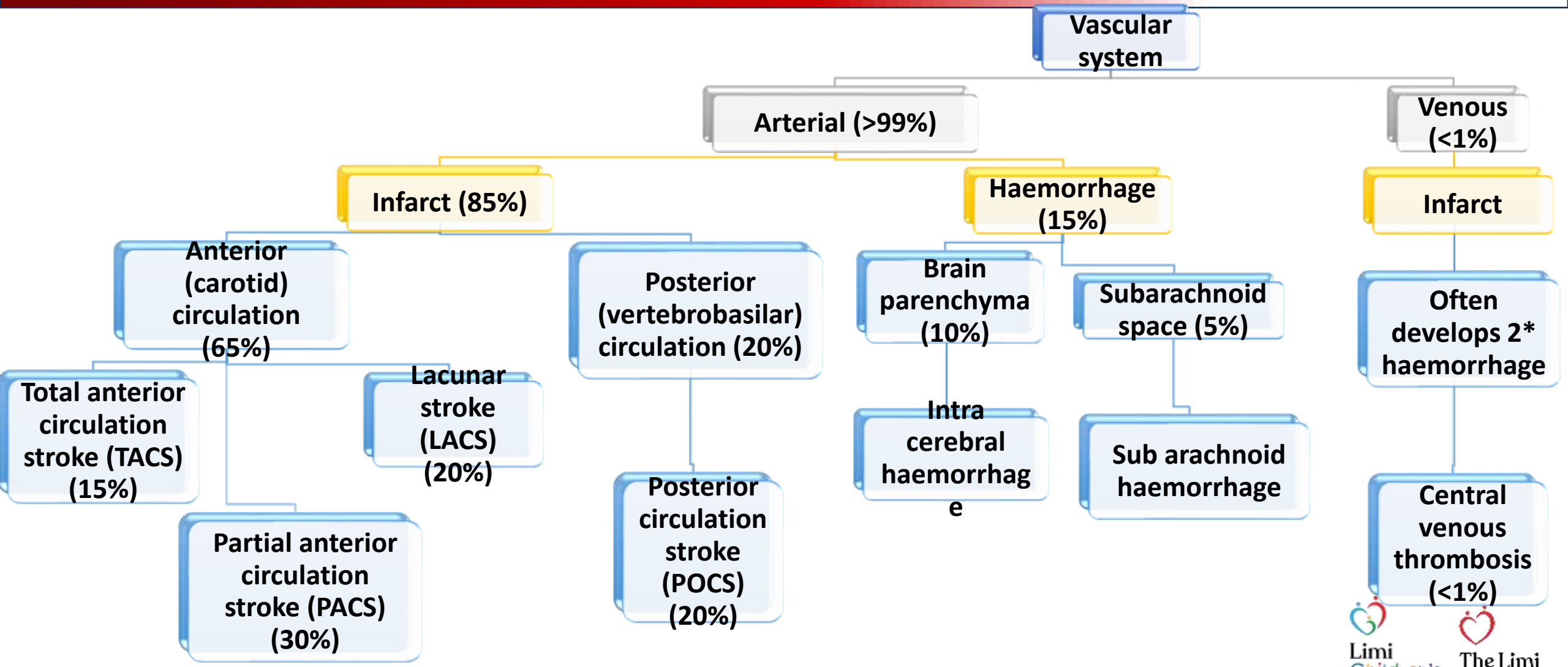

What is Stroke? Classification

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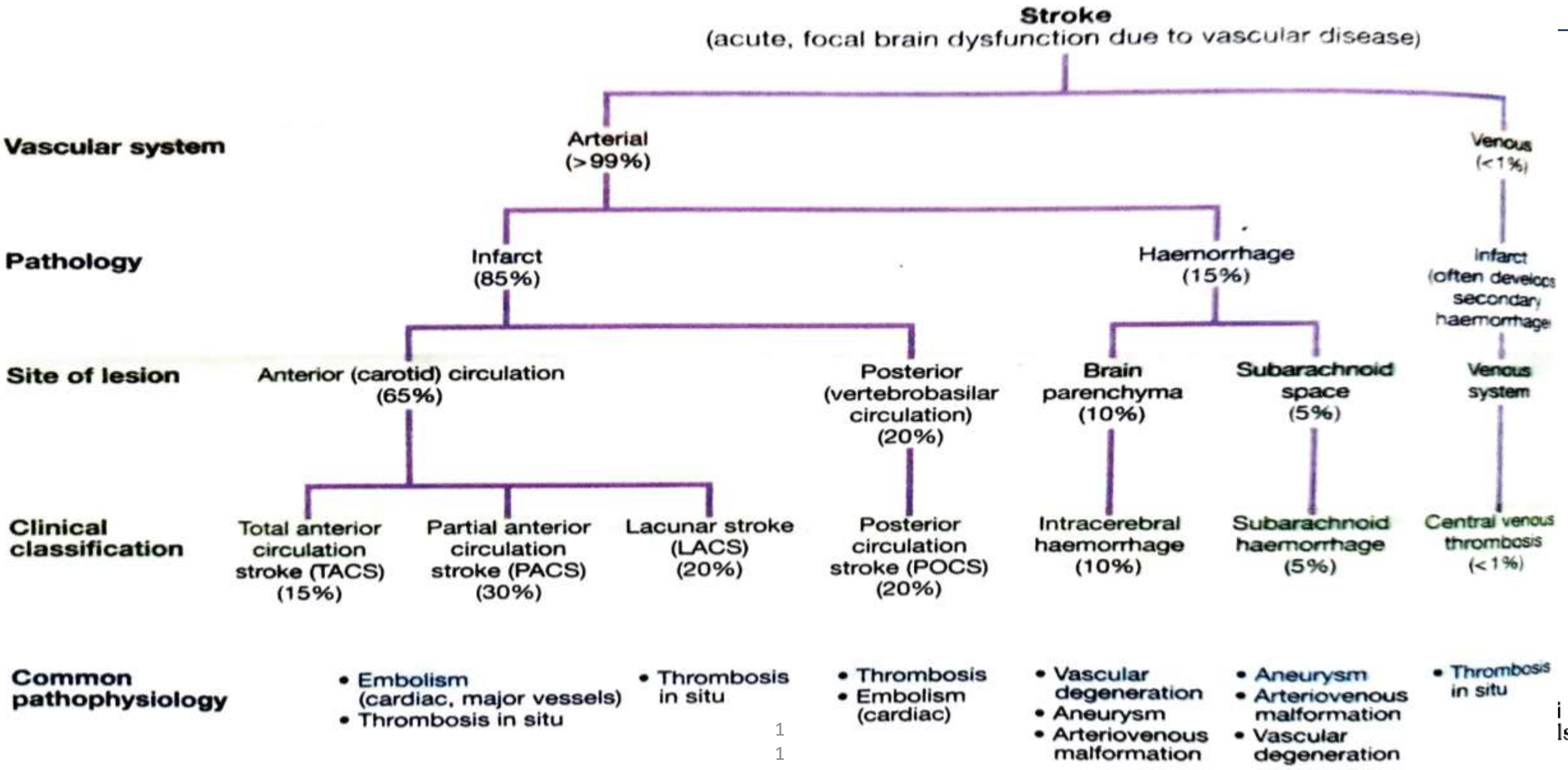


Epidemiology

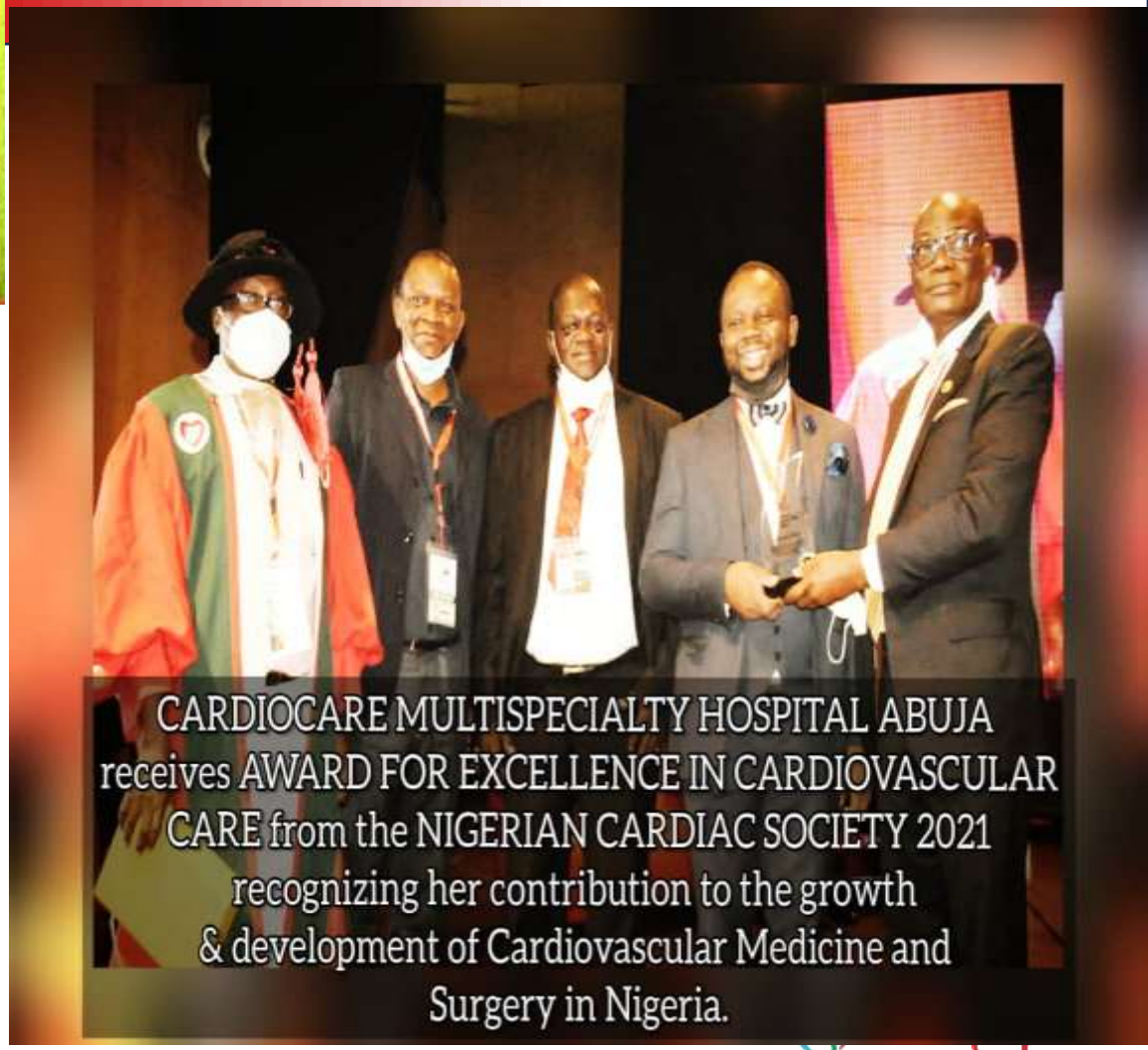
- Cardiovascular diseases are the second most common cause of death
  - with a vast majority of such deaths occurring more in low-income countries
- They are also **projected to be the second leading cause of death by 2030 (IN 5 YEARS!!!)**
- In 2016, the Global Burden of Disease study reported the worldwide prevalence for cerebrovascular disease as 79.6 million and the incidence was 13.7 million
- WHO places the global incidence of stroke at 200 cases per 100.000 inhabitants
- Up to 80% of strokes are ischemic

Who is Cardiocare Multispecialty Hospital?_

Northern Nigeria's **pioneer standalone Institution** wholly dedicated to comprehensive **Cardiovascular and Internal Medicine**.

Received Multiple **Awards for Excellence in Service.**

We are a **Support Hospital** for your practice in Nigeria through our **specialized services, training, and research in collaboration with you**.



What are the Risk Factors?

Risk Factors- Non- Modifiable

- Age- increasing
- Gender - male / female >55 years
- Race
- Family History
- Previous vascular event:
  - Stroke
  - Myocardial Infarction
  - Peripheral Artery Disease
- Hereditary e.g CARDASIL
- Sickle Cell disease
- Hypercoagulable states
- Autoimmune diseases e.g SLE, sarcoidosis

Risk Factors- Modifiable

- Hypertension
- Diabetes Mellitus
- Hyperlipidaemia
- Cigarette smoking
- Excessive alcohol intake
- Physical inactivity
- Heart Diseases:
  - Atrial Fibrillation
  - Congestive Cardiac Failure
  - Infective Endocarditis
- Oestrogen-containing drugs
- Increased fibrinogen
- Polycythaemia
- Sympathomymetic drugs e.g
  - codeine,
  - neuroleptics and
  - vasoconstrictors
- Infections:
  - Mycoplasmas
  - Syphillis
  - Chlamydia

How do Patients with Stroke Present?

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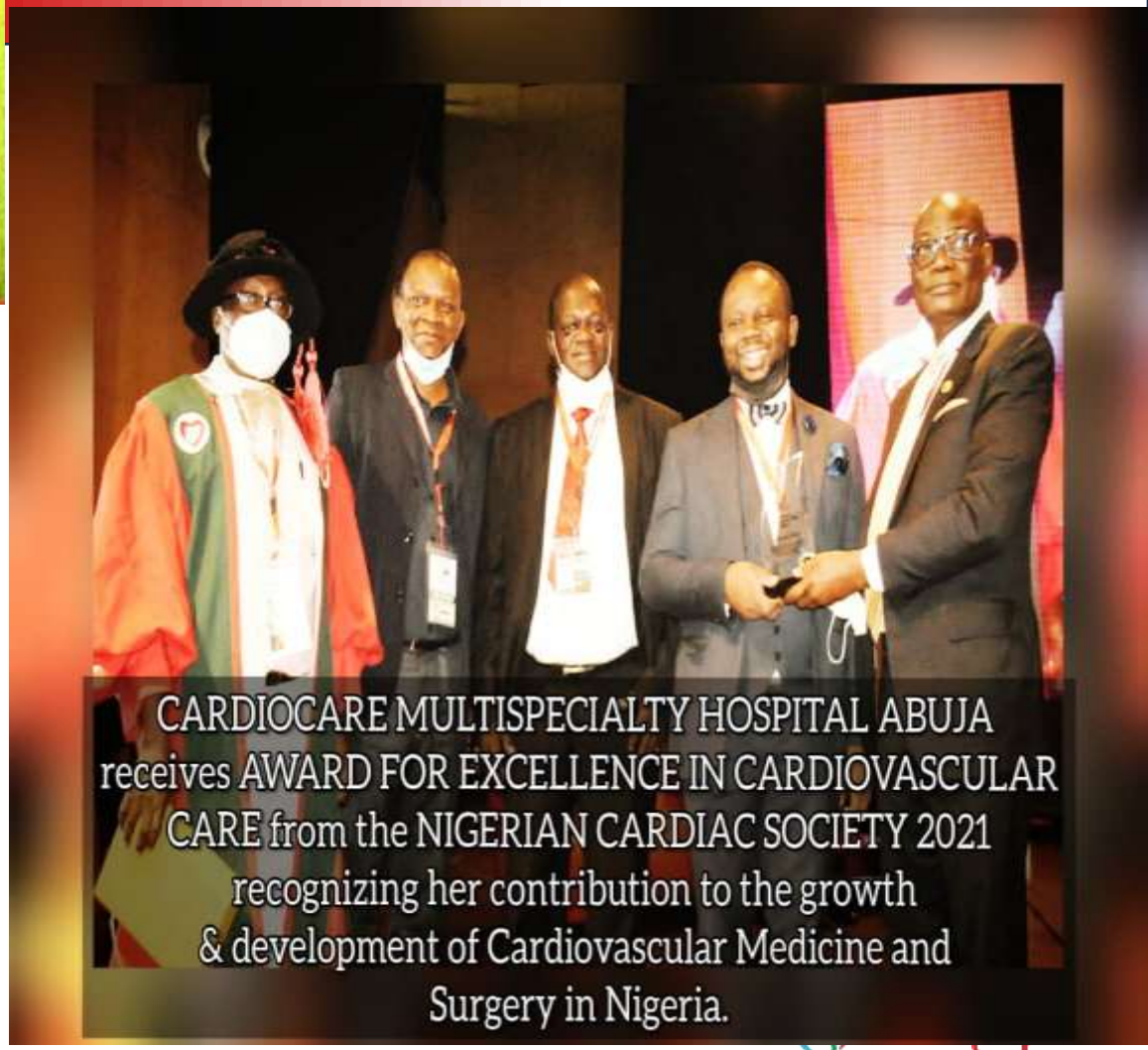


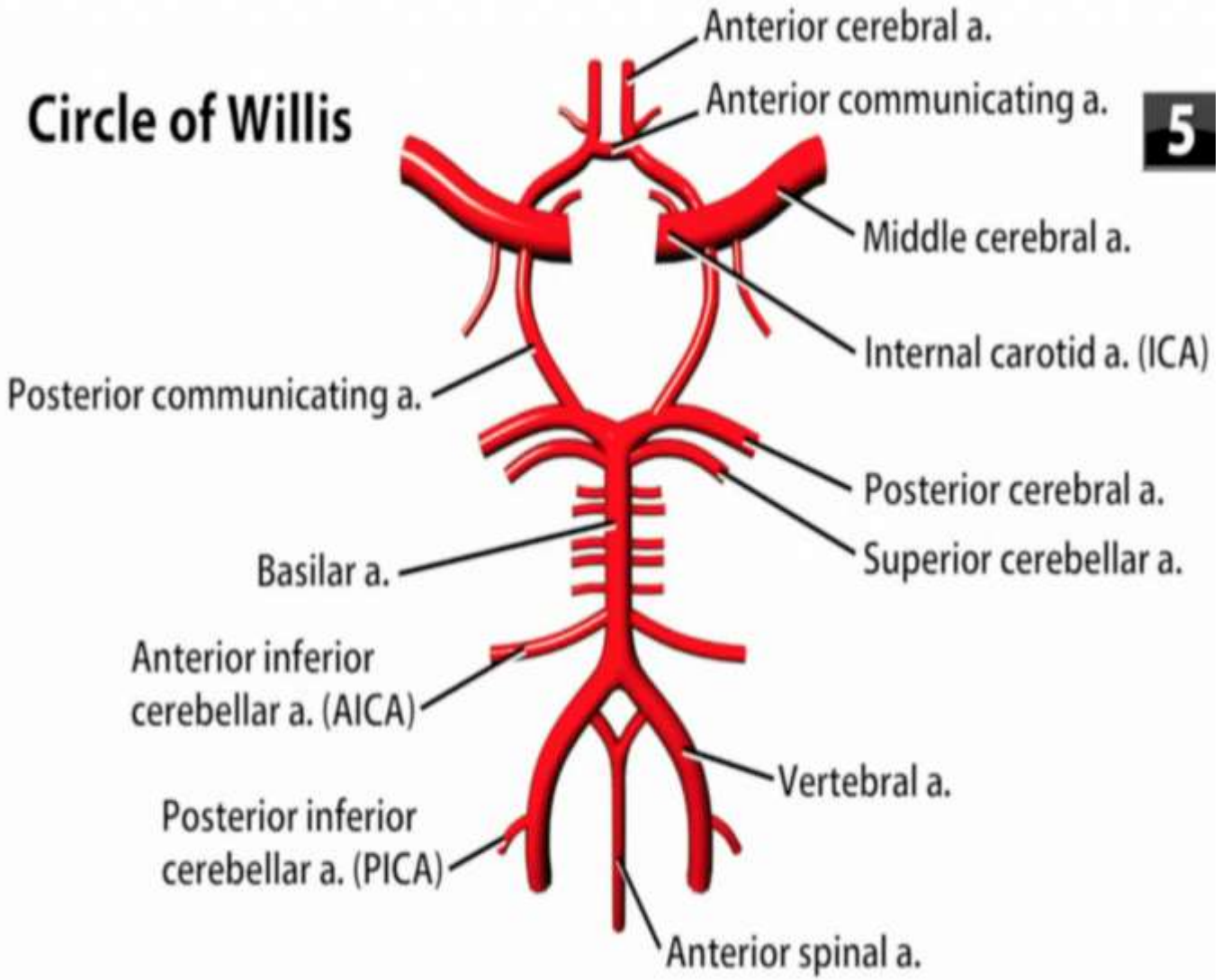
Clinical Features- Ischaemic

- Either a sudden onset or a step-wise progression of symptoms and signs over hours (or even days)

- Focal signs relate to distribution of the affected artery but collateral supplies may cause variation in presentation

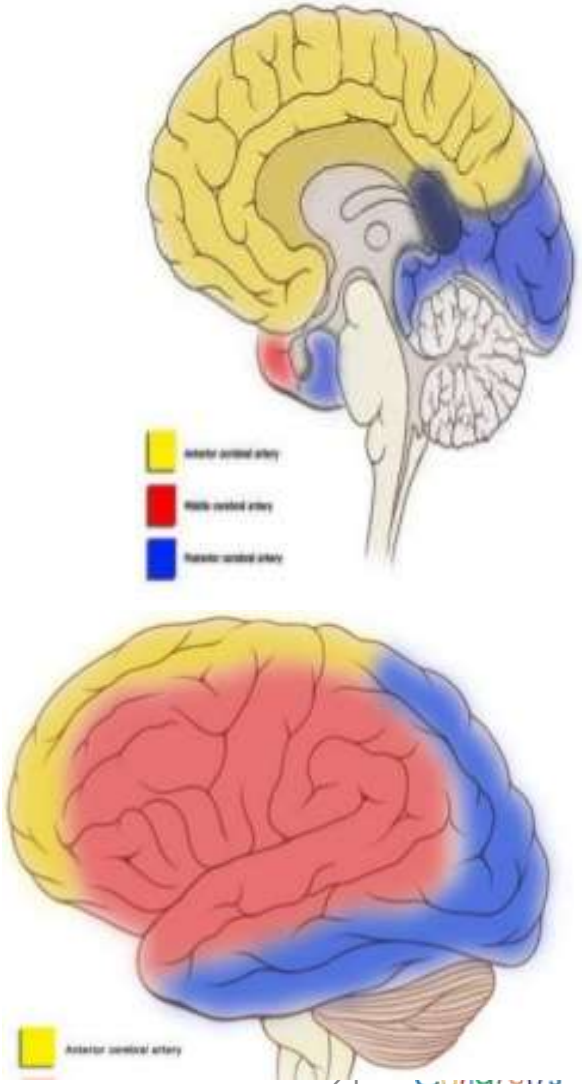
Arterial Territories affect Clinical Features

- **ANTERIOR CIRCULATION**
  - Internal Carotid Territory
  - MCA Territory
  - ACA Territory
  - Anterior Choroidal Artery Territory
- **POSTERIOR CIRCULATION**
  - Vertebral Artery Territory
  - Basilar Artery Territory
  - PCA Territory
  - Long Circumflex Branches
  - Paramedian Branches



Anterior cerebral artery stroke

- Occlusions of the ACA primarily affect frontal lobe function
  - Disinhibition and speech perseveration
  - Primitive reflexes (eg, grasping, sucking reflexes) Altered mental status
  - Impaired judgment
  - Contralateral weakness (greater in legs than arms)
  - Contralateral cortical sensory deficits
  - Gait apraxia
  - Urinary incontinence

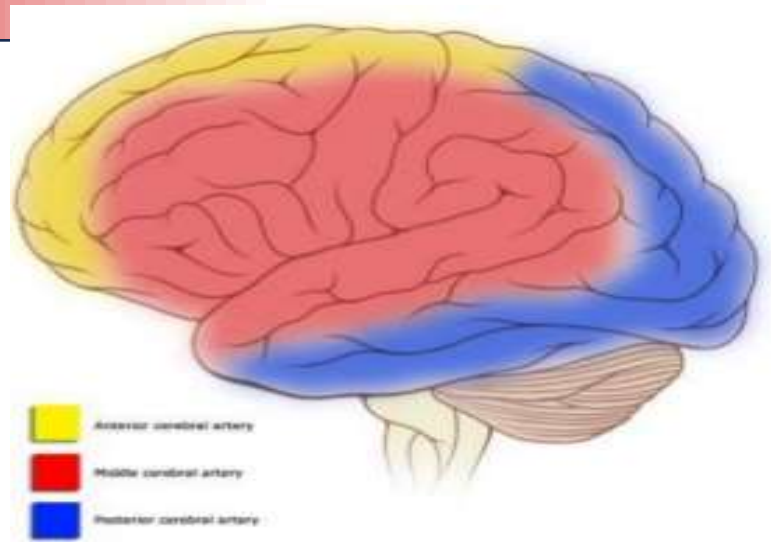


What are the Cardiocare Multispecialty Hospital's services?

We provide **24/7 world-class healthcare solutions** for patients, hospitals, and their doctors in:

- ✓ Interventional Cardiology (Cathlab)
- ✓ Endocrinology, Diabetology & Metabolic Medicine
- ✓ Cardiology
- ✓ Nephrology, Transplant & Dialysis
- ✓ Neurology
- ✓ Rheumatology
- ✓ Pulmonology
- ✓ Critical Care
- ✓ Cardiothoracic Surgery
- ✓ General Internal Medicine
- ✓ Comprehensive Medical Checkups

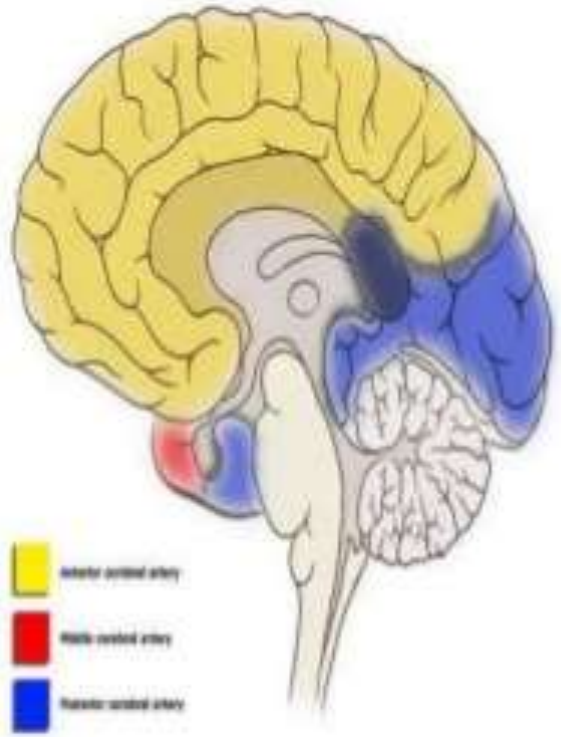
Middle cerebral artery stroke



- Contralateral hemiparesis
- Contralateral hypesthesia
- Ipsilateral hemianopsia
- Gaze preference toward the side of the lesion
- Agnosia
- Receptive or expressive aphasia, if the lesion occurs in the dominant hemisphere
- Neglect, inattention, and extinction of double simultaneous stimulation, with some nondominant hemisphere lesions
- The MCA supplies the upper extremity motor strip consequently, weakness of the arm and face is usually worse than that of the lower limb.

Posterior cerebral artery stroke

- Posterior cerebral artery occlusions affect vision and thought
- Contralateral homonymous hemianopsia
- Cortical blindness
- Visual agnosia
- Altered mental status
- Impaired memory
- **4 Ds- dizziness, diplopia, dysphasia, dysarthria**



Posterior cerebral artery stroke

- Vertigo
- Nystagmus
- Diplopia
- Visual field deficits
- Dysphagia
- Dysarthria
- Flcial hypesthesia
- Syncope
- Ataxia

- A hallmark of posterior circulation stroke is the presence of crossed findings: ipsilateral cranial nerve deficits and contralateral motor deficits

Clinical Features- Hemorrhage

- Intracerebral Hemorrhage
- Headaches
- Vomiting
- Neck stiffness
- Focal weakness
- Altered sensorium

OUR FOCUS

❖ We aim to provide the best possible care with respect to

- ❑ **SAFETY**
- ❑ **EFFECTIVENESS**
- ❑ **PATIENT CENTEREDNESS**
- ❑ **INTERNATIONAL STANDARDS**

Clinical Features- SAH

- Severe Headaches- thunder clap
- Vomiting
- Neck stiffness
- Photophobia
- Focal weakness
- Altered sensorium

How do we Manage Stroke?

Slight Differences based on Type

Stroke Management

A	• Assessment of ABCD
B	• BP Management
C	• CT-Scan and other tests
D	• +/- Definitive Care- Recanalization, Reperfusion
E	• Early Rehabilitation
F	• Fluids & Supportive Care
G	• Glucose Management
H	• High Intensity Nursing & Complication Prevention
I	• Identification and Optimization of CV Risk

A- Assessment

- **Airway:**
  - **confirm patency**
- **Breathing:**
  - **check respiratory rate and give oxygen if saturation < 95%**
- **Circulation:**
  - **obtain IV access, monitor BP and perform laboratory assessments**
- **D**isability, Sensorium and Neurologic Function
- **F**ever: If febrile, give anti-pyretics
- **G**lucose
  - Check and control blood glucose If > 11mmol/L, use insulin

Our Offered Services

We provide advanced solution to all aspect of Cardiovascular Medicine and Surgeries.

- ✓ **Cardiology**
- ✓ **Interventional Cardiology (Cathlab)**
- ✓ **Endocrinology, Diabetology &**
- ✓ **Nephrology, Transplant & Dialysis**
- ✓ **Neurology**
- ✓ **Rheumatology**
- ✓ **Pulmonology**
- ✓ **Critical Care**
- ✓ **Cardiothoracic Surgery**
- ✓ **General Internal Medicine**
- ✓ **Comprehensive Medical Checkups**

A- Assessment

National Institute of Health Stroke Scale (NIHSS)

- Perform neurologic screening assessment
  - 0-5 mild/minor in most patients
  - 5-15 moderate
  - 15-20 moderately severe
  - >20 very severe

Modified Rankin score (mRS)

- 0: No symptoms at all
- 1: No significant disability despite symptoms; able to carry out all usual duties and activities
- 2: Slight disability; unable to carry out all previous activities, but able to look after own affairs without assistance
- 3: Moderate disability; requiring some help, but able to walk without assistance
- 4: Moderately severe disability; unable to walk without assistance and unable to attend to own bodily needs without assistance
- 5: Severe disability; bedridden, incontinent and requiring constant nursing care and attention
- 6: Dead

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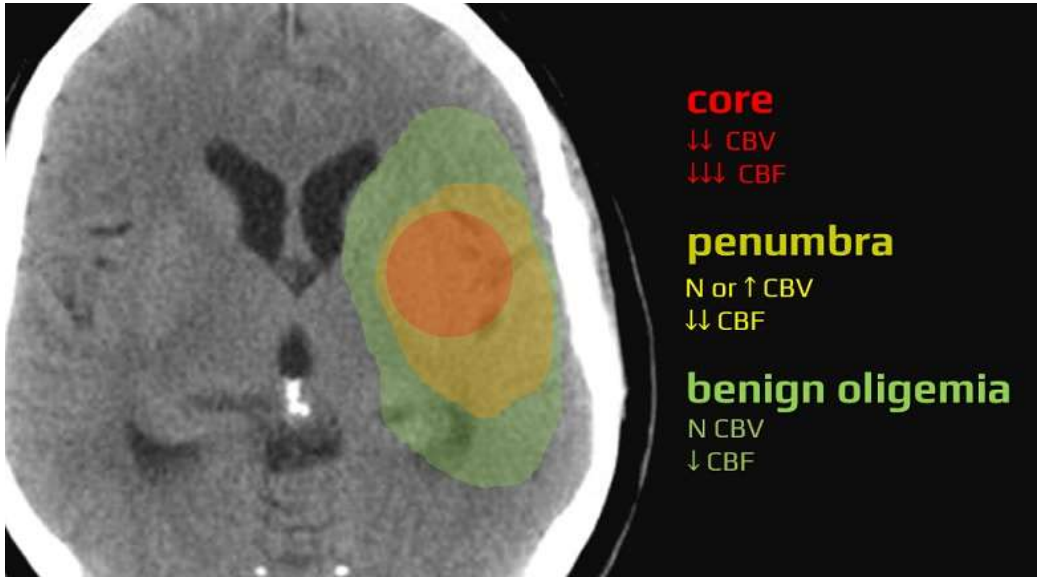
B- BP Management

- Blood pressure monitoring:
  - every 15 minutes in the first 2 hours, then
  - every 30 minutes in the next 6 hours and then
  - every hour in the next 16 hours
- The goal is to lower blood pressure by 15% during the first 24 hours after onset of stroke
- Care must be taken to not lower blood pressure too quickly or aggressively
  - this could worsen perfusion in the penumbra



B- BP Management

- Permissive hypertension to improve cerebral perfusion pressure (CPP)
  - CPP = MAP– ICP
  - **Do not give anti-hypertensives (permissive hypertension)** Unless

  - ISCHAEMIC: if **SBP>220 mmHg or DBP>120 mmHg or MAP >145**
  - HEMORRHAGIC: If **BP >180/120mmHg**; Target BP 140/90 mmHg (stroke)

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C- CT Scan and other investigations

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- From time of arrival (door) to doctor 10min
- Access to neurological expertise 15 mins
- Door to CT scan completion 25min
- Door to CT scan interpretation 45min
- Door to treatment 60 min
- Admission to stroke unit or ICU 3 hours

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MULTISPECIALTY HOSPITAL

Our Non-Invasive Assessment services

- ❑ HOTLERS
- ❑ SPIROMETRY
- ❑ STRESS
- ❑ EEG
- ❑ ECG

C- CT Scan and other investigations

- Complete blood count
- Serum electrolytes - EUCr
- Liver function test
- FBS, 2HPP, HbA1C
- Lipid profile
- Prothrombin time/international normalized ratio
- HIV screen
- Toxicology screen Blood alcohol determination

C- CT Scan and other investigations

- Electrocardiogram
- Echocardiogram
- Chest radiography (if lung or cardiac disease is suspected)
- Lumbar puncture (if subarachnoid hemorrhage is suspected and CT is negative
  for blood)
- Electroencephalogram (if seizures are suspected)
- Oxygen saturation or arterial blood gas tests (if hypoxia is suspected)

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D-Definitive

Urgent non- contrast CT scan

Ischemic stroke

Candidate for thrombolysis <4.5hr

Reduce BP if >185/110 mmHg using IV labetalol 10-20 mg over 1-2 min

Thrombolysis

Maintain BP at <180/105 mmHg

Not a candidate for thrombolysis

Reduce BP if >220/120mmHg using IV labetalol 10-20 mg over 1-2 min Repeat every 15 mins max of 300mg

ANTI-PLATELET THERAPY: Tabs Aspirin 300mg start then 150 mg daily/ tabs clopidogrel 75 mg daily

Hemorrhagic stroke

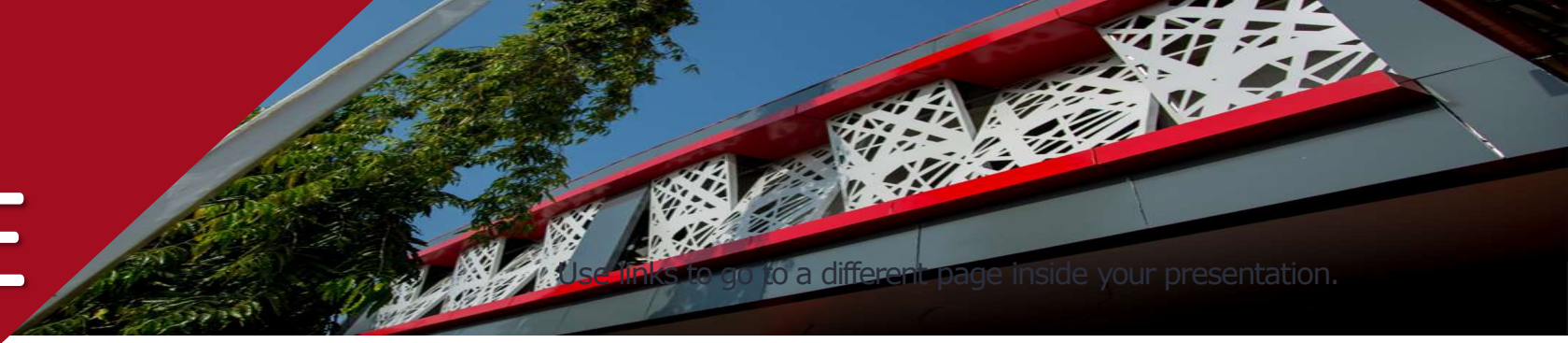
Ventricular extension
SAH
Hydrochephalud
Posterior fossa
Raised ICP

Reduce BP if >180/120mmHg Target BP 140/90 mmHg

Urgent consult to Neuro surgeon

- NEURO REHABILITATION
- SECONDARY PREVENTION
- PREVENT COMPLICATIONS

ADVANCED CARE



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1 **CORONARY ANGIOGRAPHY & INTERVENTIONS-** For patients presenting with chest pains, acute coronary syndrome

2 **PERIPHERAL ANGIOGRAPHY & INTERVENTIONS-** For patients presenting with Peripheral vascular diseases causing tissue loss or gangrene

3 **CARDIAC DEVICE IMPLANTATION & PROGRAMMING** such as Pacemakers, ICDs,CRTs for patients presenting with heart failure & Cardiac rhythm abnormalities

4 **STRUCTURAL HEART INTERVENTIONS –** for patients presenting with ASD, VSD, PDA etc..

5 **THROMBOEMBOLIC THERAPIES such as IVC Filters,** for VTE (Venous Thrombo-embolic) treatment and management

6 **CARDIAC SURGERY –** Open Heart Surgery

7 **KIDNEY TRANSPLANT & DIALYSIS**

8 **CRITICAL CARE**

9 **ADVANCED CARDIAC INVESTIGATIONS**

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E- Early Rehabilitation

- **Early stroke rehabilitation should involve a multidisciplinary team**
- Rehabilitation provided to a stroke survivor should be **at an intensity that the patient can tolerate and benefit from**
- Care transition and discharge planning should take place before patient discharge
- This should include a formal evaluation of the patient's activities of daily living (ADLs), instrumental ADLs, ability to communicate, and functional mobility

E- Early Rehabilitation

- Speech therapy

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- ❑ ECG

F- Fluids & Supportive Care

- Maintain **euvolemia** (normal volume status) — avoid dehydration *and* fluid overload.
- Prevent hypotension: low BP reduces cerebral perfusion.
- Avoid excessive fluids: worsens cerebral edema or heart failure.
- Use **isotonic fluids**; **avoid hypotonic solutions**.
- **NS 0.9% at maintenance rate**: 1–1.5 mL/kg/hr.

F- Fluids & Supportive Care

- If febrile, give anti-pyretics
- Nurse at 30 degrees head up
- If the patient is unconscious, manage as such
- NPO if gag reflex is absent/reduced
- If reduced consciousness or poor airway reflexes → **prepare for intubation**; call senior/anaesthetist.
- **VTE prophylaxis**: mechanical (TEDs, IPC) and pharmacologic per protocol (start when safe).

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G- Glucose Management

Target blood glucose (acute phase): 140–180 mg/dL (7.8–10 mmol/L) for most patients. Tight glucose control is **not** recommended because it increases hypoglycaemia risk. www.heart.org+1

Always check blood glucose at presentation (before considering thrombolysis).

Hypo- or hyperglycaemia can mimic stroke. www.heart.org

Treat hypoglycaemia immediately (usually defined as <70 mg/dL / <3.9 mmol/L). If hypoglycaemic symptoms or low reading: give 15–20 g rapid-acting carbohydrate (e.g., 50 mL 50% dextrose IV) and recheck in 10–15 min.

Avoid aggressive normalization (e.g., strict tight control <140 mg/dL) — inconsistent benefit and increased hypoglycaemia. Use moderate control (140–180 mg/dL).

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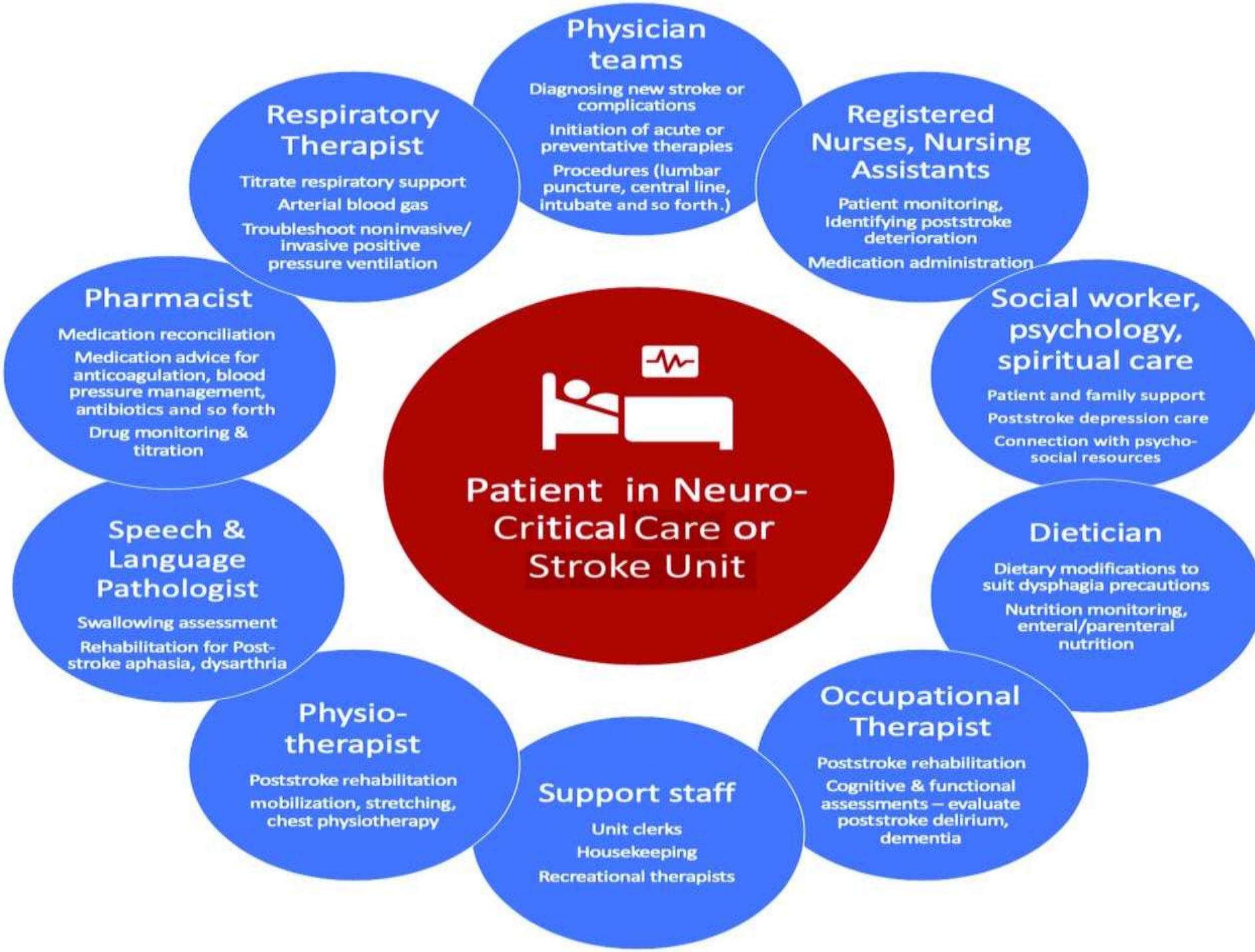
H- High Intensity Nursing & Complication Prevention



OUR FACILITIES

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MULTISPECIALTY HOSPITAL

24

BED SPACE

VIP SUITES,

PRIVATE SUITES,

GENERAL SUITES etc

2

INTENSIVE CARE UNIT

HDU&ICU

3

THEATERS

ULTRAMORDEN CATHLAB, CARDIAC OPERATION THEATER

1

DIALYSIS SUITE

PHYSIOLOGY LAB

RADIOLOGY SIUTE

H- High Intensity Nursing & Complication Prevention

H- High Intensity Nursing & Complication Prevention

Positioning	Oxygen & Airway	Neurologic & General Vital Signs
• Elevate head of bed **30°** unless hypotensive. • Turn head midline to promote venous drainage and lower ICP.	• Give O_2 only if **SpO_2 < 94%**. • Suction gently if needed. • Prepare for airway support if GCS low or poor gag reflex.	• **Every 15–30 min** for hyperacute or thrombolysis patients. • **Hourly** once stable. • **Every 4 hours** in stable ward patients.

H- High Intensity Nursing & Complication Prevention (2)

Respiratory Care	General Nursing	Psychosocial, Emotional & Cognitive Support
• Prevent aspiration: **no oral intake** until **swallow screening** is passed. • Perform oral hygiene regularly. • Encourage deep breathing if awake; • Chest physiotherapy if needed.	• **Early Mobilization** • **Pressure Injury Prevention** • **DVT Prevention** • Bowel & Bladder Care • Ensure safe medication administration routes for dysphagic patients	• Communicate slowly; give time to respond. • Use simple instructions. • Support family involvement. • Identify mood changes, depression, agitation; notify team.

Our Clinic Management Team

Interventional Cardiologists

Clinical Cardiologists

Cardiothoracic Surgeon

Endocrinologist

Neurologist

Nephrologist

Cardiac Physiologists

Radiologist and Certified Cath lab Technicians

Dietician

Nurses

Pharmacists

I- Identification and Optimization of CV Risk

- Ischaemic Stroke
  - Goal is to optimize prevention of recurrent stroke- addressing risk factors
  - Statins e.g Atorvastatin 40mg daily
  - Antithrombotic agent e.g Clopidogrel 75mg daily
  - If atrial fibrillation is present,
    - Give anticoagulants like Dabigatran, Rivaroxaban, Apixaban (warfarin Target INR range of 2.0-3.0)
  - If atrial fibrillation is absent,
    - Then Clopidogrel/Aspirin can be given
- Keep Blood Pressure well controlled
  - Consider ABPM to ensure control

Summary

- Stroke is the leading cause of disability
- The burden of this disability is real
- Rapid diagnosis and timely interventions is key in stroke management- TIME IS BRAIN
  - Resuscitation
  - Recanalization.
  - Reperfusion
  - Neuro rehabilitation
  - Secondary Prevention
- Multidisciplinary approach is critical

THANK YOU

Our vision to curb medical tourism
Is incomplete without your collaborations

Lets do it together!

Lets support your practice for better patients outcomes.

Lets partner with you…

Cardiocare Hospital Abuja appreciates you & the opportunity to be here!