

Cerebrovascular Accident

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Definitions

- **Cerebrovascular Accidents-**
 - Neurologic deficits of Vascular origin
- **Transient Ischaemic Attacks**
 - Sudden or rapid neurologic deficit caused by cerebral ischaemia lasting for a few minutes to 24hrs and clears without residual defects.
- **Stroke**
 - Rapid onset of neurologic deficit involving a certain vascular territory and lasting more than 24hrs

Transient Ischaemic Attacks

- **ETIOLOGY**
 - ***Cardiac Emboli***
 - Atrial fibrillation
 - Prosthetic valves
 - Mitral valve disease
 - ***Carotid or Vertebral artery disease***
 - Arteriosclerosis
 - Dissection of aortic aneurysm
 - Vasculitis
 - ***Hematologic Disorders***
 - Red cell disorders
 - Platelet disorders
 - myeloproliferative Disorders
 - Increased viscosity

- **RISK FACTORS**

- Hypertension
- Smoking
- Dyslipidaemia
- Advanced age
- Diabetes
- Elevated Homocysteine levels in elderly

- **INVESTIGATIONS**
 - ***Good history and physical examination***
 - Determine the vascular tree involved
 - Carotid or vertebral
 - ***Laboratory***
 - FBC
 - Prothrombin time/INR
 - U/E, LFT, Creatinine
 - Protein C and S
 - CXR
 - ECG
 - Brain CT

- **TREATMENT**

- ***Medical Therapy***

- Anticoagulation with heparin or warfarin
 - Antiplatelets
 - Aspirin
 - Clopidogrel
 - Dipyridamol 200mg daily

- ***Surgical therapy***

- ***Risk factor management***

- Modification of smoking
 - Control hypertension
 - Aggressive glucose control in DM
 - Aspirin therapy in patient with cardiomyopathy or previous MI
 - Dietary and pharmacologic control of hyperlipidaemia

Stroke

- **Types**

- Ischaemic-85% of all strokes

- Embolic

- Thrombotic

- Haemorrhagic

- **ETIOLOGY AND RISK FACTOR**

- Causes and risk factors are the same as those of TIA.

- **ISCHAEMIC STROKE**

- ***Etiology***

- Thrombosis
 - Embolism

- ***Clinical presentation***

- Varies cerebral vessel involved
 - ***thrombotic***
 - Gradual in onset
 - Often occurs at night while the patient is sleeping
 - Patients wakes up with neurologic deficit
 - Predisposing factors include
 - » Hypertension
 - » Diabetes Mellitus
 - » Vasculitis
 - » Atherosclerosis

- ***Embolic***

- Very rapid onset
- Patient is usually awake and involved in some activity
- Predisposing factors include
 - » Atrial fibrillation
 - » Mitral valve Disease
 - » Endocarditis
 - » Paradoxical embolism

- **MANAGEMENT OF ISCHAEMIC STROKES**
 - CT scan
 - Blood pressure control
 - Thrombolysis in patient who present within 3 hours of onset.
 - Tissue plasminogen activator
 - Streptokinase
 - Anticoagulation
 - heparin
 - Anti-platelets for secondary prevention
 - Aspirin 75mg-300mg daily
 - Clopidogrel 75mg daily

– ***Ancillary treatment***

- Manage cerebral oedema
- Electrolyte balance
- Respiratory support

- **HAEMORRHAGIC STROKES**

- This can be

- Subarchnoid hemorrhage
 - Intracerebral hemorrhage

- **SUBARACHNOID HEMORRHAGE**

- ***Etiology***

- Ruptured congenital or acquired aneurysm
 - AV malformation

- ***Clinical manifestation***

- Abrupt onset of occipital or generalized headache
 - Restlessness
 - Projectile vomiting
 - Diminishing level of consciousness
 - Neckrigidity
 - Papilloedema
 - Cranial nerve palsy

- **Investigations**

- CT Scan
- Lumbar puncture
- Angiography

- **Management**

- ***Medical management***

- Strict bed rest
 - Control of headache with acetaminophen or codeine
 - Patient must avoid all forms of straining
 - Stress ulcer prophylaxis
 - Ranitidine
 - Cimetidine
 - Reduce cerebral oedema with mannitol
 - Nimodipine may be used. It improves the cerebral blood flow

- ***Surgical management***

- **INTRACEREBRAL HEMORRHAGE**

- ***Etiology***

- Hypertension in 50 to 60% of cases
 - Hemorrhagic infarcts
 - Use of anticoagulation drugs
 - Brain tumors
 - Vascular malformations

- ***Clinical presentation***

- Haemorrhage occurs during time of activity
 - Focal localising signs
 - Signs of increased intracranial pressure
 - Bradycardia
 - Decreased respiration rate
 - Third nerve palsy

– ***Diagnosis***

- CT scan

– ***Management***

- Medical therapy
 - Admit to ICU
 - Fluid management, mainly normal saline up to 1.5l/24hrs
 - Supportive measures
 - Control of severe hypertension
 - » Lower BP to reduce cerebral oedema
 - » Lower BP by about 25%
 - Manage raised intra-cranial pressure
 - » Mannitol 1g/kg IV bolus
 - » Then 12.5g to 25g IV every 4 to 6hrs
 - » Intubation and ventilation
 - Correct any coagulation defects
- Surgical management