

Cerebrovascular Accident



Breaking down in tears

- 'I'm a student who's never seen a person die. When the time comes, I'm afraid I'll lose it and upset the patient or family. How do you do this work all the time and not break down in tears?'



Pathology

- The pathology involving the CNS arises from injuries, vascular insufficiency, tumors, infections and disorders from other diseases. Neurological medical problems are due to interference with normal functioning of the affected cells

Nervous System Anatomy and Physiology Review

- The nervous system acts as a coordinated unit both structurally and functionally
- Communication network responsible for coordinating and organizing the functions of all body parts
- The body's link to the environment
- Works with the endocrine system to maintain homeostasis
- Reacts in a split second

Functions

- 1. Regulates system
- 2. Controls communication
- 3. Coordinates Activities of body system

Divisions

- Central nervous system (CNS) : brain and spinal cord –interprets incoming sensory information and sends out instruction based on past experiences
- Peripheral nervous system (PNS) : Cranial and spinal nerves extending out from brain and spinal cord---carry impulses to and from brain and spinal cord

Neurological Terms

- Anesthesia- complete loss of sensation
- Aphasia-loss of ability to use language
- Auditory/receptive aphasia- loss of ability to understand
- Expressive aphasia- loss of ability to use spoken or written word
- Ataxia- uncoordinated movements
- Coma- state of profound unconsciousness
- Convulsion- involuntary contractions and relaxation of muscles

Neurological terms

- Delirium- mental state characterized by restlessness and disorientation
- Diplopia- double vision
- Dyskeinesia- difficulty in voluntary movement
- Flaccid- without tone- limp
- Neuralgia- intermittent, intense pain, along the course of a nerve

Neurological terms

- Neuritis- inflammation of a nerve or nerves
- Nystagmus- involuntary, rapid movements of the eyeball
- Paresthesia- abnormal sensation without obvious cause, with numbness and tingling
- Stupor- state of impaired consciousness with brief response only to vigorous and repeated stimulation

Patho

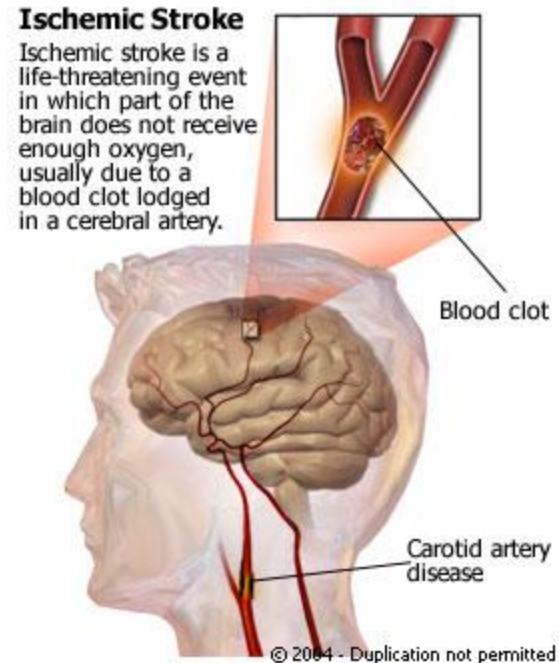
- Decreased blood supply to a part of the brain
- caused by rupture , occlusion, or stenosis of the blood vessels
- Onset may be sudden or gradual
- Symptoms and patient problems depend on location and size of area of brain with reduced or absent blood supply
- right CVA results in Left side involvement often associated with safety/ judgment
- Left CVA results in Right side involvement often associated with speech problems

Epidemiology

- Symptoms related to location and size of brain area affected
- Approximately 50% of survivors permanently disabled
- High proportion experiencing recurrence within weeks to years
- Chances for complete recovery depending on circulation returning to normal soon after the initial stroke
- Third most common cause of neurological disability

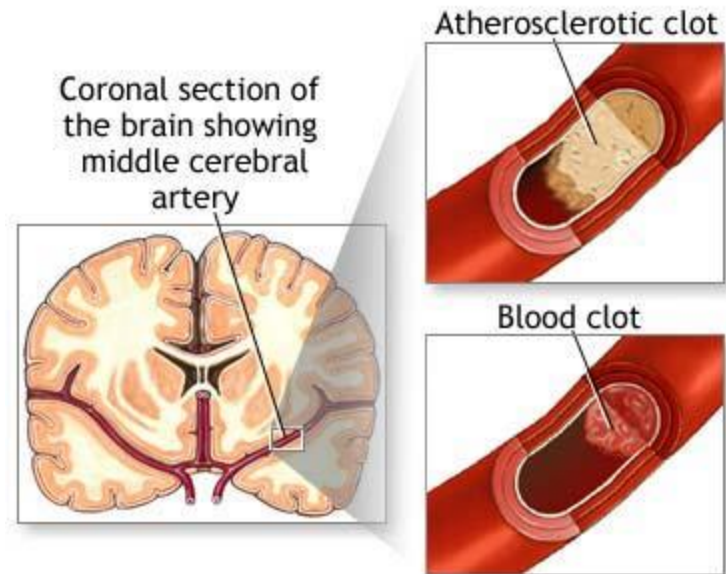
Cerebrovascular accident

- CVA
- Stroke
- Brain attack
- Incidence increased with aging
- Atherosclerosis
- Embolism
- Thrombosis
- Hemorrhage from ruptured cerebral aneurysm
- hypertension



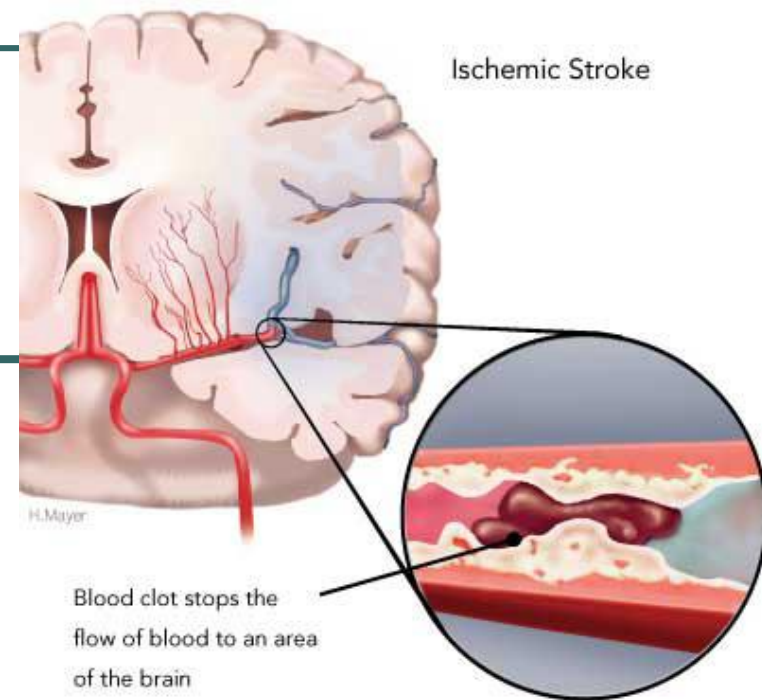
CVA: Pathophysiology

- Disruption of blood flow to part of the brain →
- Ischemia →
- Tissue Anoxia →
- \downarrow PaO₂ & \uparrow PaCO₂ →
- Acidosis →
- Infarction →
- Edema →
- \uparrow ICP



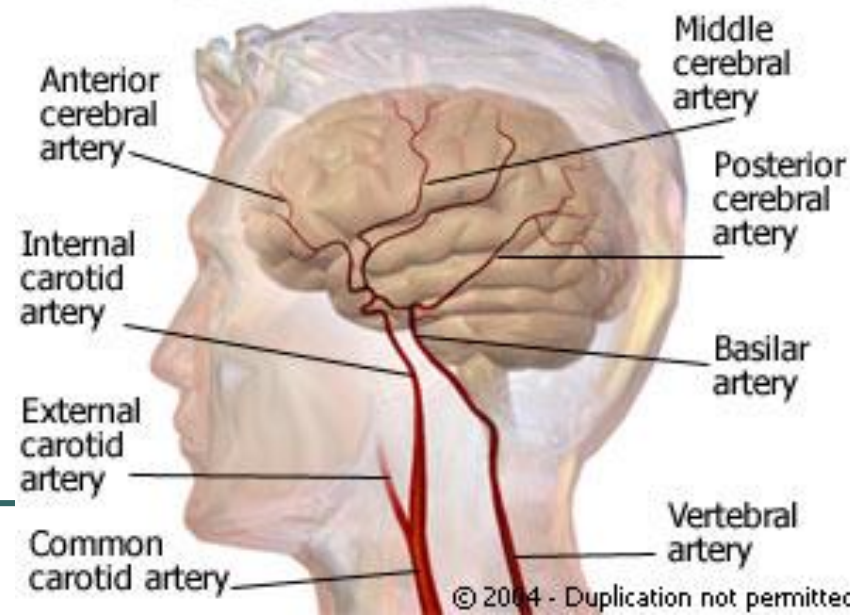
CVA: Etiology

- Ischemic (80%)
 - Thrombosis
 - ___?___ → thrombosis
 - Arteriosclerosis
 - Common site
 - Carotid artery
 - Embolism
 - Atrial fib or HTN →
 - Plaque breaking off and becoming an emboli
 - d/t Long standing cardiovascular disease
- Classification
 - Transient
 - Ischemic
 - Embolic



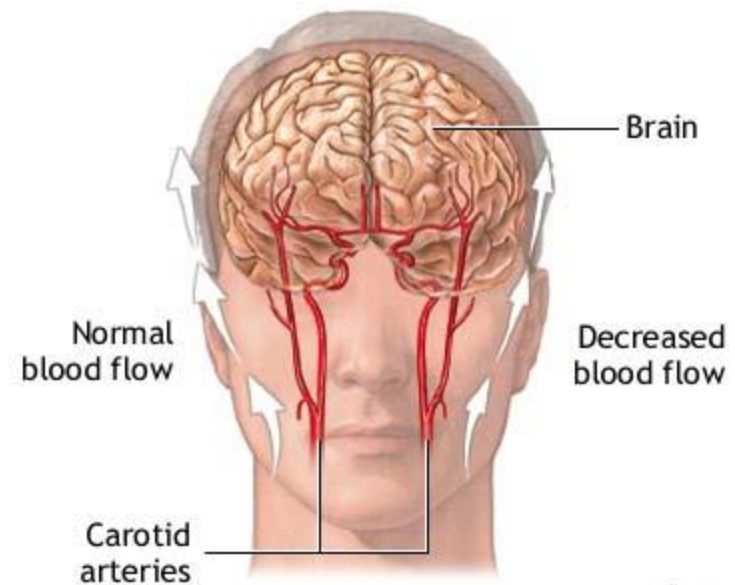
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Cerebrovascular System



TIA: Transient Ischemic Attack

- Short reversible ischemic event
- Duration
 - < 24 hrs
- No permanent neuro deficit/ Temporary Loss
- Warning!
- “Mini Stroke”



Transient Ischemic Attacks

TIA

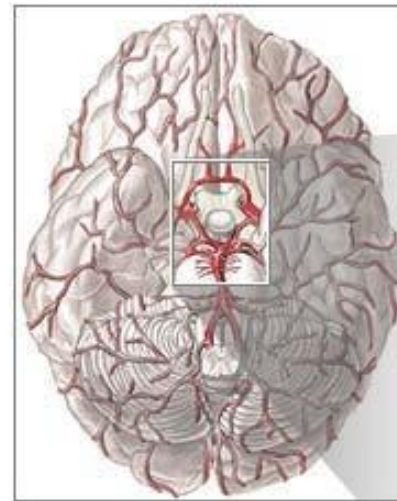
- Altered cerebral tissue perfusion related to a temporary neurologic disturbance
- Manifested by sudden loss of motor or sensory function
- Lasts for a few minutes to a few hours
- Caused by temporarily diminished blood supply to an area of the brain
- High risk for stroke

Hemorrhagic Stroke

- Usually more severe with a longer recovery period than ischemic stroke
- Caused by bleeding into:
 - Brain
 - Ventricles
 - Subarachnoid space

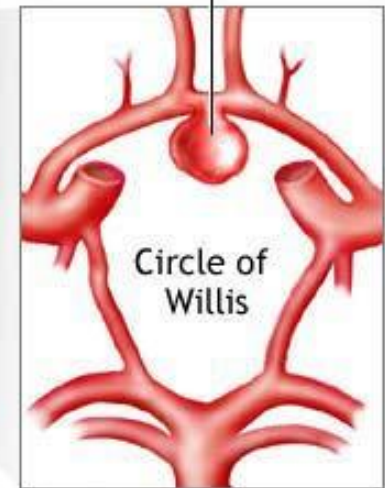
Hemorrhagic Stroke

- Cerebral aneurysm
 - Dilatation, bulging or ballooning out of part of the wall of a vein or artery in the brain
 - When they enlarge and press upon cranial nerves or tissue →
 - Symptoms



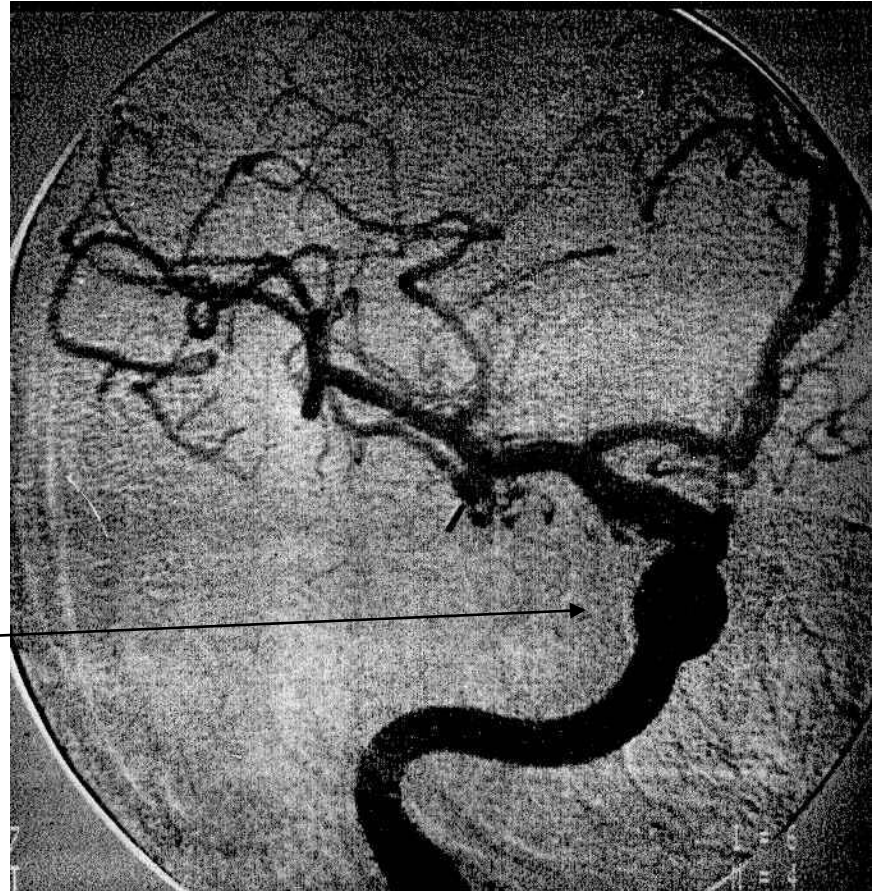
Bottom view of brain and major arteries of the brain

Berry aneurysm on the anterior communicating artery of the brain



Hemorrhagic Stroke

- Etiology
 - HTN
 - Arteriosclerosis
 - Meds

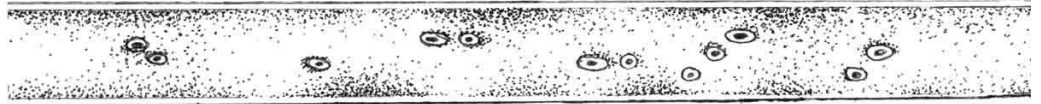


Hemorrhagic Stroke

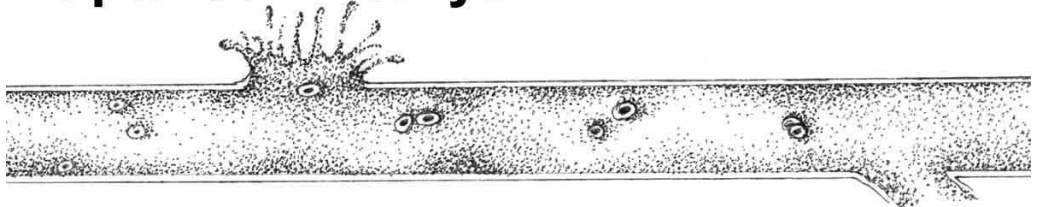
Clinical Manifestations

- Similar to ischemic
- Unique S&S
 - H/A
 - LOC
 - Nuchal rigidity

Normal Artery

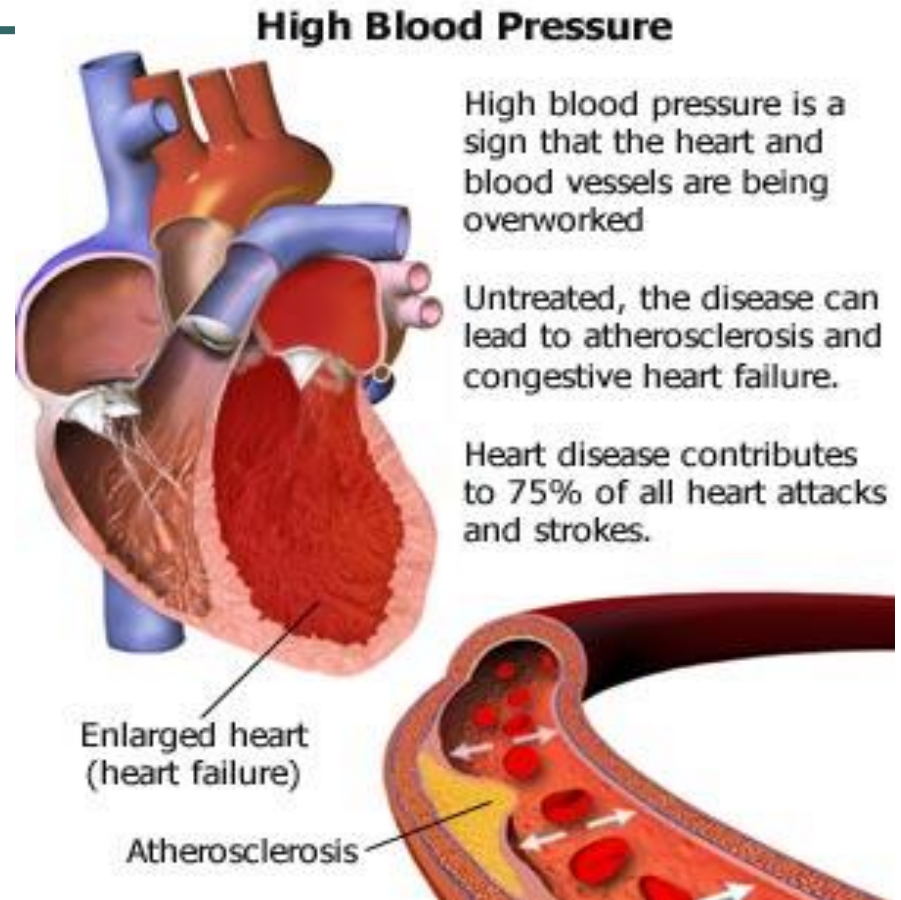


Ruptured Aneurysm



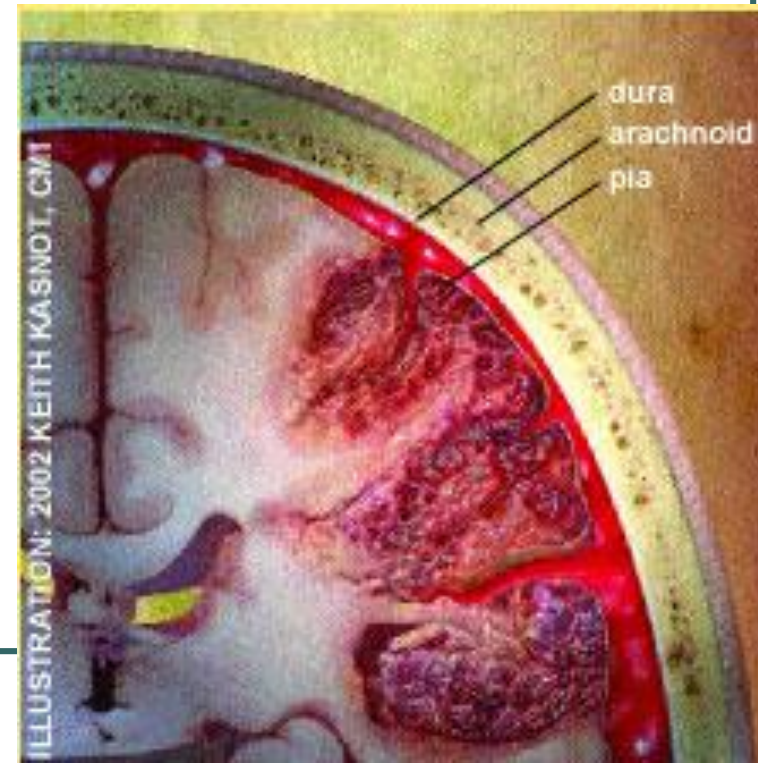
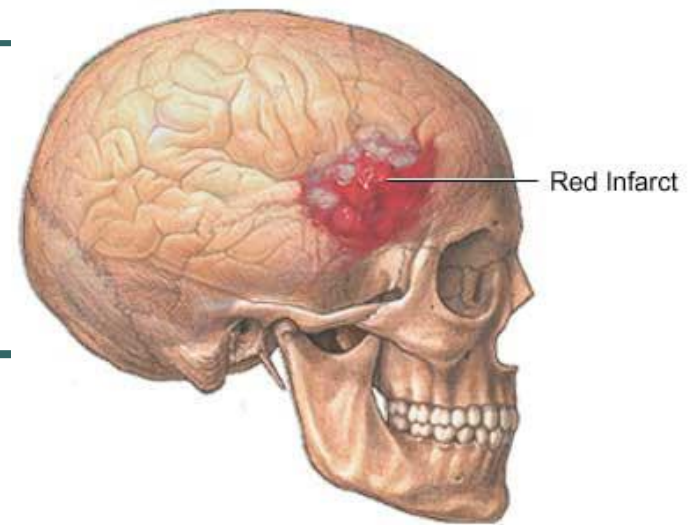
CVA: Etiology

- Hemorrhage
 - Rupture of the cerebral blood vessel
 - Commonly caused by poor control of HTN
- Most fatal
- Intracerebral, Subarachnoid (SAH)
 -

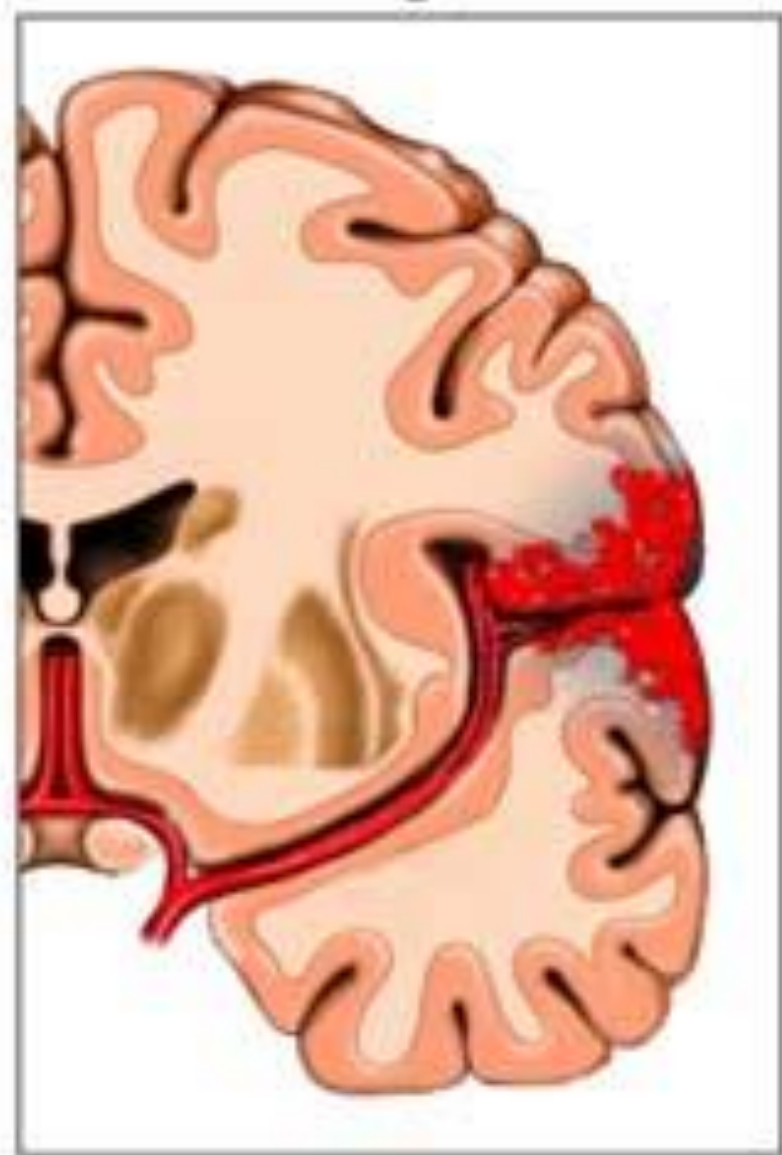


CVA: Etiology

- Hemorrhage
 - This type of CVA results in:
 - Slow recovery
 - ↑ probability of neurological deficits
 - No meds to reverse the effects

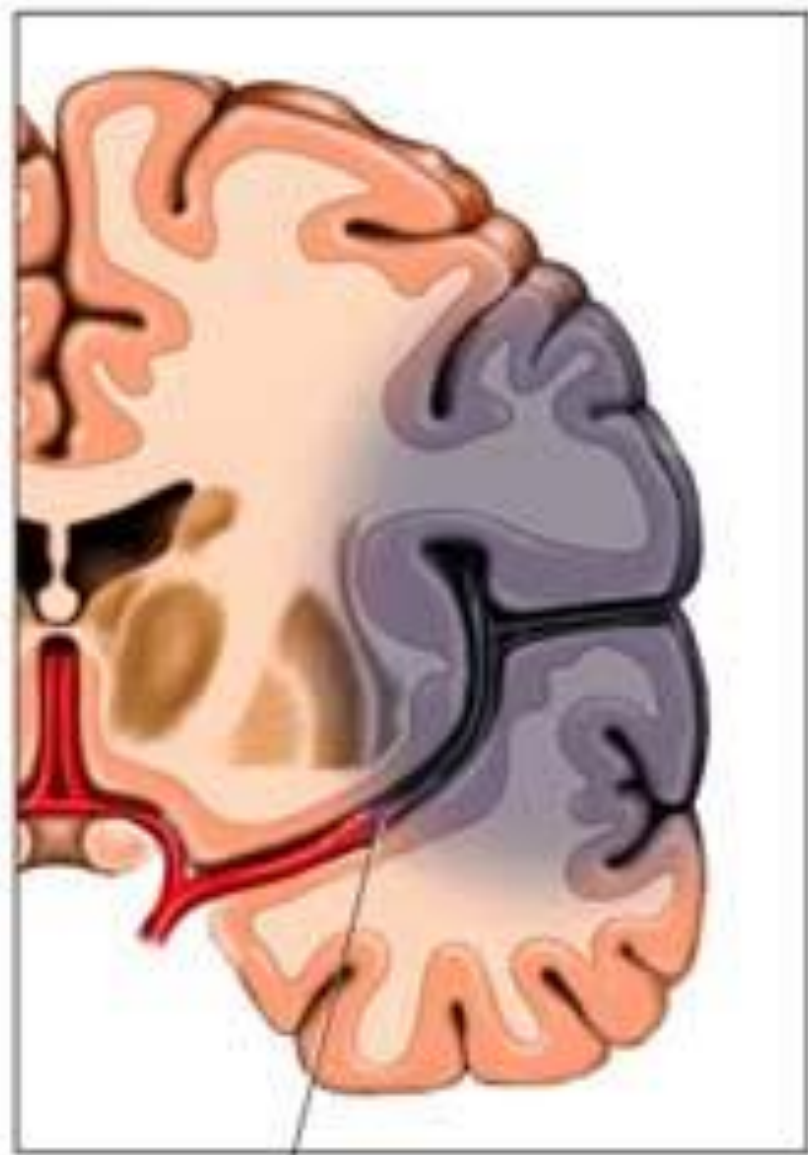


Hemorrhagic Stroke



Hemorrhage/blood leaks into brain tissue

Ischemic Stroke



Clot stops blood supply to an area of the brain

CVA: Etiology

- Other causes
 - Syphilis
 - Trauma
 - Hypertension
 - Hypoxia
 - ***Anything the ↓ blood flow
 - H/O TIAs
- Rheumatic Heart Disease
- Arrhythmias

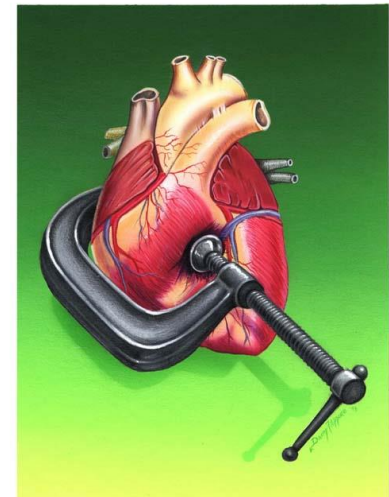
CVA: Risk Factors

Changeable

- Smoking
- Obesity
- High serum triglyceride levels
- Lack of exercise
- Hypertension
- Heart disease (MI)
- Sedentary life
- Stress
- ↑ fat diet
- ↑ Na diet
- Substance abuse
- Oral contraceptives
- Diabetes mellitus
- Atherosclerosis

Non-changeable

- Age
- Gender
- Family history
- Race



CVA: Risk Factors

Which is the most important risk factor for a stroke?

A. Smoking

B. Weight

C. Diet

D. HTN

E. Stress

F. Substance Abuse

CVA: Risk Factors

What is the number one cause of CVA in a younger patient?

A. Smoking

B. Weight

C. Diet

D. HTN

E. Stress

F. Substance Abuse

CVA: Pathophysiology substance abuse

- Substance (PCP, crack) →
- ↑ Blood pressure →
- ↑ ICP →
- Subarachnoid & intracerebral hemorrhage →
- Interrupt blood flow →
- ↓ O₂ & ↓ glucose →
- Depressed neurons →

CVA: Pathophysiology

- ** Vessels involved determine the area of the brain involved
- *** Area affected determines the S&S

CVA: Clinical manifestations

S&S depend on:

1. Location
2. Size
3. Amount

Stroke

BRAIN ACCIDENT - CVA

- Headache
- Mental Changes
 - Confusion
 - Disorientation
 - Memory Impairment
- Aphasia (CVA Left Hemisphere)
- Resp Problems
(↓ Neuromuscular Control)
- ↓ Cough / Swallow Reflex
- Agnosia (↓ Sensory Interpretation)
- Incontinence
- Seizures



- Hemiparesis or Hemiplegia
- Emotional Lability

- Visual Changes
(Homonymous Hemianopsia)



- Horner's Syndrome -
Ptosis of Upper Lid
 - Vomiting
- Perceptual Defects
(CVA Right Hemisphere)
- Hypertension
- Apraxia
(↓ Learned Movements)

TIA:

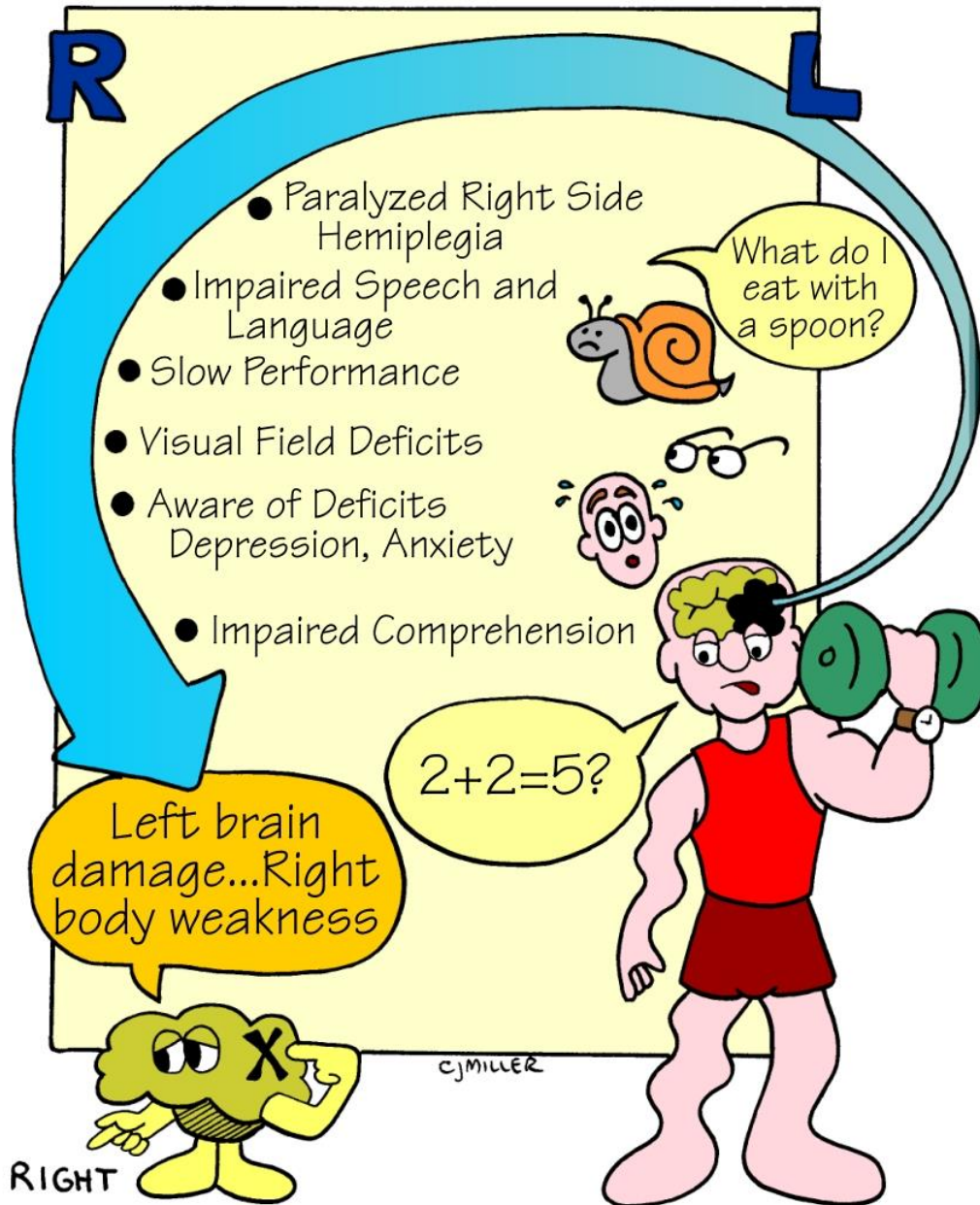
- Confusion
- Vertigo
- Dysarthria
- Transient Hemiparesis
- Temporary Vision Changes
- Lasts a Few Minutes → 24 hrs.

Focal Neurological S & S:

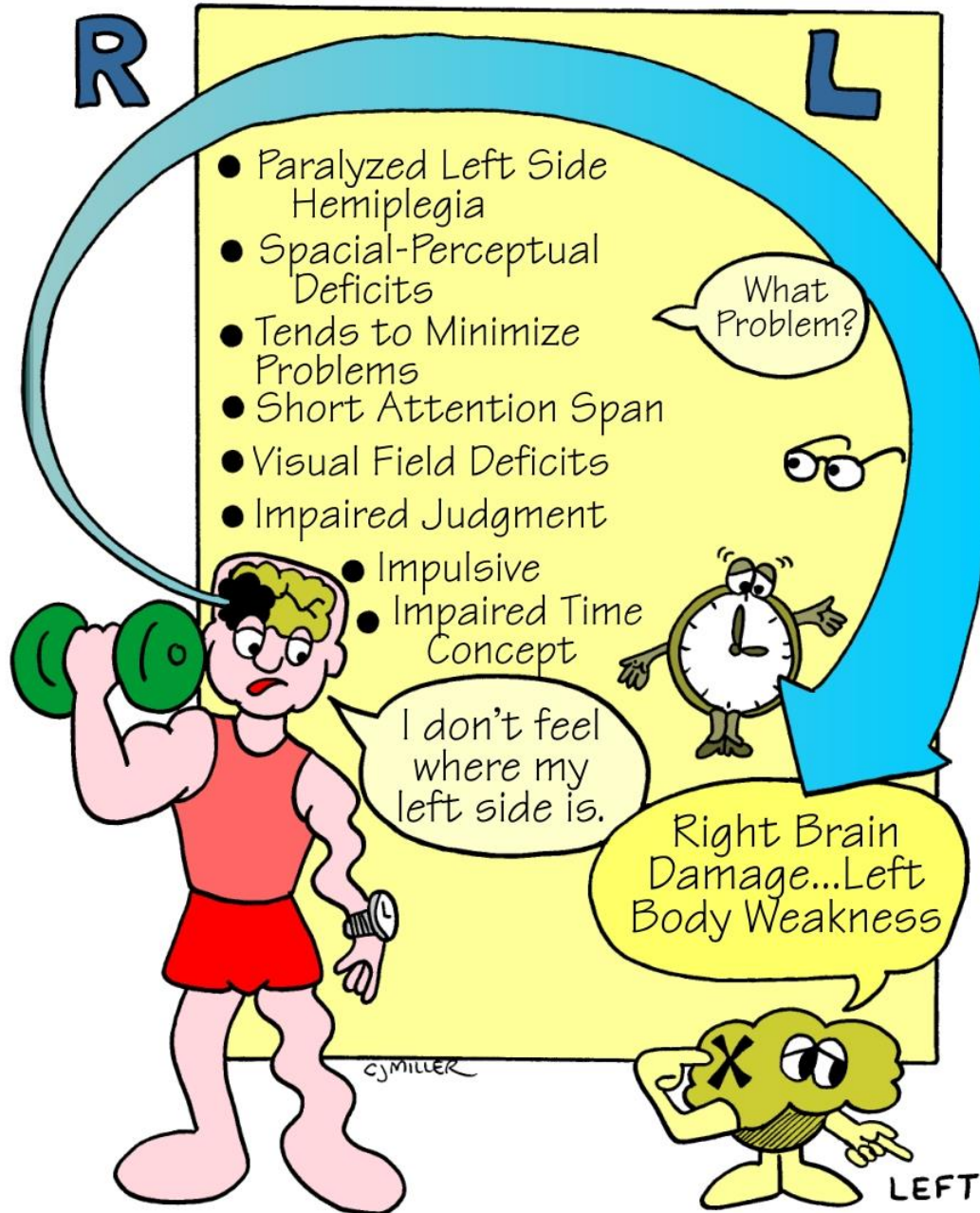
- Paralysis
- Sensory Loss
- Language Disorder
- Reflex Changes

Syncope
Paraesthesia
Diff walking

LEFT CVA



RIGHT CVA



Left vs. Right Hemispheric CVA

Left CVA		Right CVA
Aphasia	Language	
	Speech	
	Sensation	
	Perception	
	Movement	

Left vs. Right Hemispheric CVA

Left CVA		Right CVA
Aphasia	Language	
Dysarthria	Speech	
	Sensation	
	Perception	
	Movement	

Left vs. Right Hemispheric CVA

Left CVA		Right CVA
Aphasia	Language	
Dysarthria	Speech	
Right Homonymous hemianopsia	Sensation	
	Perception	
	Movement	

Left vs. Right Hemispheric CVA

Left CVA		Right CVA
Aphasia	Language	
Dysarthria	Speech	
Right Homonymous hemianopsia	Sensation	
Normal awareness	Perception	
	Movement	

Left vs. Right Hemispheric CVA

Left CVA		Right CVA
Aphasia	Language	
Dysarthria	Speech	
Right Homonymous hemianopsia	Sensation	
Normal awareness	Perception	
Right side paresis	Movement	

Left vs. Right Hemispheric CVA

Judgment intact Depression Slow & cautious	Behavior	
	Cognition	
	Memory	

Left vs. Right Hemispheric CVA

Judgment intact Depression Slow & cautious	Behavior	
Impaired analytical	Cognition	
	Memory	

Left vs. Right Hemispheric CVA

Judgment intact Depression Slow & cautious	Behavior	
Impaired analytical	Cognition	
Deficit new language info	Memory	

Left vs. Right Hemispheric CVA

Left CVA		Right CVA
Aphasia	Language	Intact
Dysarthria	Speech	
Right Homonymous hemianopsia	Sensation	
Normal awareness	Perception	
Right side paresis	Movement	

Left vs. Right Hemispheric CVA

Left CVA		Right CVA
Aphasia	Language	Intact
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Right Homonymous hemianopsia	Sensation	
Normal awareness	Perception	
Right side paresis	Movement	

Left vs. Right Hemispheric CVA

Left CVA		Right CVA
Aphasia	Language	Intact
Dysarthria	Speech	Dysarthria
Right Homonymous hemianopsia	Sensation	Left Homonymous hemianopsia
Normal awareness	Perception	
Right side paresis	Movement	

Left vs. Right Hemispheric CVA

Left CVA		Right CVA
Aphasia	Language	Intact
Dysarthria	Speech	Dysarthria
Right Homonymous hemianopsia	Sensation	Left Homonymous hemianopsia
Normal awareness	Perception	Unilateral neglect
Right side paresis	Movement	

Left vs. Right Hemispheric CVA

Left CVA		Right CVA
Aphasia	Language	Intact
Dysarthria	Speech	Dysarthria
Right Homonymous hemianopsia	Sensation	Left Homonymous hemianopsia
Normal awareness	Perception	Unilateral neglect
Right side paresis	Movement	Left side paresis

Left vs. Right Hemispheric CVA

Judgment intact Depression Slow & cautious	Behavior	Judgment impaired Denial Impulsive behavior
Impaired analytical	Cognition	
Deficit new language info	Memory	

Left vs. Right Hemispheric CVA

Judgment intact Depression Slow & cautious	Behavior	Judgment impaired Denial Impulsive behavior
Impaired analytical	Cognition	
Deficit new language info	Memory	Deficit new spatial info

CVA

Signs and Symptoms

- Altered LOC
- Change in mental status
- Decreased attention span
- Decreased ability to think and reason
- Difficulty following simple directions
- Communication; motor and sensory aphasia
difficulty with reading ,writing, speaking, or
understanding
- Bowel and bladder dysfunction retention
impaction or incontinence

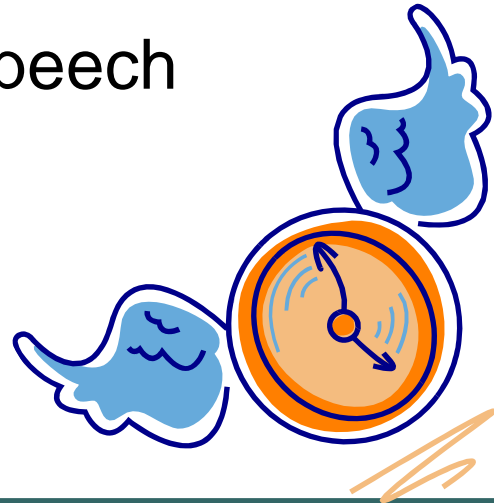
CVA

Signs and Symptoms

- Seizures
- Limited motor function; paralysis, dysphagia, weakness , hemiplegia, loss of function
- Loss of sensation/ perception
- Headaches and syncope
- Loss of temp regulation elevated TPR and BP
- Absent of gag reflex (aspiration)
- Unusual emotional responses; depression, anxiety, anger, verbal outburst, and crying: emotional lability
- Problems related with immobility

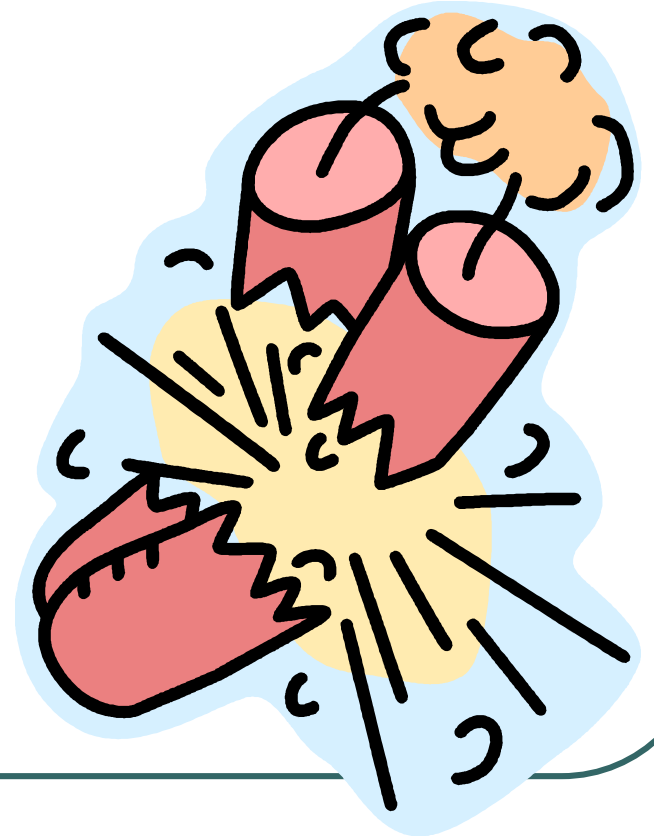
Warning! Time of the Essence!

- Sudden Numbness or Weakness
 - Face, arm or leg
 - Especially on one side of the body
- Sudden Confusion
 - Difficulty speaking
 - Difficulty comprehending speech
- Sudden Difficulty Seeing
 - One or both eyes



Warning! Time of the Essence!

- Sudden Difficulty
 - Walking
 - Dizziness
 - Loss of balance/coordination
- Sudden Severe HA
 - No known cause



Stroke Recognition:

3 Steps to Stroke Recognition



Ask the person to smile
and stick out tongue



Ask the person to make
a complete sentence



I can't fall
tell side
which one.



ejmiller

Ask the person to
raise both arms.



Contact someone if the person cannot
perform these 3 steps!

Case scenarios

- What side stroke did she have?
 - Right sided
- How do you know?
 - Denial
 - Poor judgment
 - No aphasia
- What side stroke did she have?
 - Left sided
- How do you know?
 - Depression
 - Emotional labile
 - Normal awareness
 - Aphasia

Preparing a patient for a diagnostic test

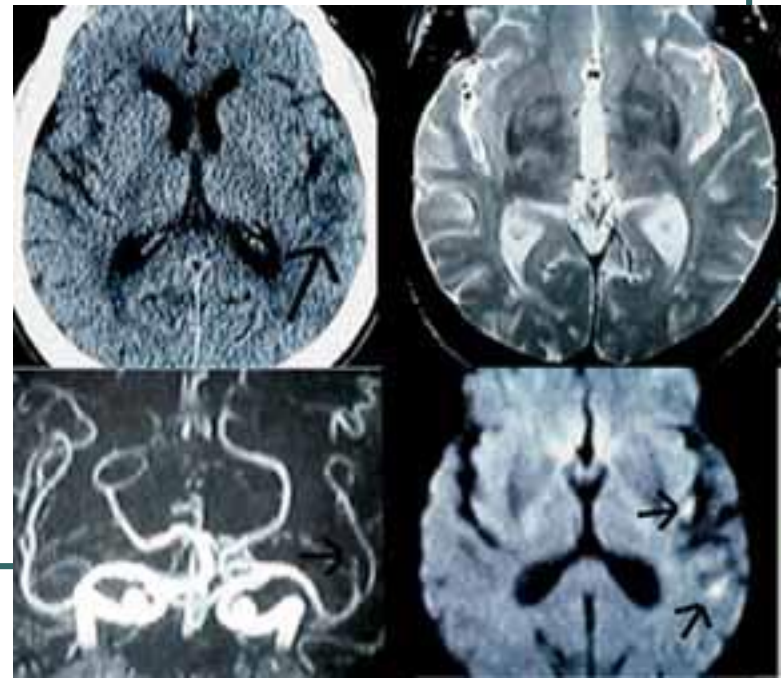
- Answer question that the patient may need clarification
- Diet orders –NPO???
- Special room or equipment used
- Special medications required for test
- An informed patient will be more cooperative
- Nursing assessment
- Baseline vital signs and neuro cks
- Know level education to develop an individualized teaching plan
- Determine awareness of actual or potential medical diagnosis
- Determine previous experience with Dx test

Diagnostic test/ methods

A. Computerized Tomography- CT or CAT scan computer analysis of tissues as x-rays pass through them; has replaced many of the usual tests: no special preparation or care after test

MRI/ MRA

Bleeding
Infarction
Shift



CT scan

- Nursing Interventions
 - Explain procedure – will be enclosed tunnel
 - Written consent
 - Assess allergies to iodine
 - Remove wigs hair pins or clips, partial denture plates
 - Assess for pacemakers
 - NPO 4 hours before if oral contrast is administered
 - Encourage patient to drink fluids to avoid renal complications and to promote excretion of the dye

Diagnostic test/ methods

- B. lumbar puncture- spinal tap
 - Done under local anesthesia a puncture is made at the junction of the third and fourth lumbar vertebrae to obtain a specimen of cerebrospinal fluid (CSF)
 - CSF pressure measured
 - Used to inject medications- spinal anesthesia
 - Used to inject diagnostic materials –air or dye-myelogram
- High BP, blood

Lumbar puncture

- Nursing interventions
 - Written consent
 - Monitor vital signs
 - Have patient empty bowel and bladder
 - Position the patient
 - Label and number specimens
 - Keep patient supine 4-8 hours
 - Observe for headache and nuchal rigidity
 - Observe for mobility of extremities, pain, ability to void
 - Monitor site for leakage

Diagnostic test/ methods

- Cerebral Angiography- intraarterial injection of radiopaque dye to obtain an xray film of the cerebrovascular circulation

Occlusion

Cerebral angiography

- Nursing interventions
 - Written consent
 - Assess for allergy to iodine
 - NPO past midnight
 - Administer preprocedure medications
 - Observe arterial puncture site
 - Monitor extremity for adequate circulation- pain tenderness bleeding temperature and color
 - Pedal pulses and vital signs q 1 hour
 - Provide ice pack to puncture site
 - Bedrest 12- 24 hours
 - Force fluids- to increase excretion of dye

Diagnostic test/ methods

- Electroencephalography (EEG)- electrodes are placed on unshaven scalp with tiny needles and electrode jelly

EEG

- Nursing Interventions

- Anticipate patient's fears about electrocutions
- Explain procedure
- Written consent
- Hair should be clean
- Do not give stimulants/ depressants before test /consult with M.D. about meds
- Administer sedatives or hypnotics if ordered
- No smoking or caffeinated beverages before the test
- Eat full meal before the test –hypoglycemia may alter brain waves
- Stress need for restful sleep before the test sleep deprivation may cause abnormal brain waves
- Wash hair and scalp after test

Diagnostic test/ methods

- Brain Scan-after injection of a radioisotope, abnormal brain tissue will absorb more rapidly than normal tissue: this can be detected with a Geiger counter to diagnose brain tumors
- PET, SPECT
- Carotid ultrasonogram

Brain Scan

- Nursing interventions
 - NPO 4 hours before test
 - Remove wigs, hair clips or pins,
 - Assess for iodine allergies
 - If ordered give sedation
 - Encourage fluids after test to increase excretion of dye

Diagnostic test/ methods

- Magnetic Resonance Imaging- (MRI)
uses combination of radio waves and a strong magnetic field to view soft tissue (does Not use x-rays or dyes) ; produces a computerized picture that depicts soft tissues in high –contrast color

MRI

- Nursing interventions
 - Written consent
 - Explain procedure- will have to remain perfectly still in the narrow cylinder-shaped machine . No pain or discomfort but no room for movement
 - Assess for any metal contraindications- pacemaker, surgical clips, hair clips, belts
 - Empty bladder before test

Diagnostic test/ methods

- Myelogram- injection of a radiopaque dye into the subarachnoid space via a lumbar puncture: performed to locate lesions of the spinal column or ruptured vertebral disk

Myelogram

- Nursing interventions
 - Written consent
 - Prepare for LP
 - NPO for 4 hours before test
 - Positioning for LP
 - Vital signs
 - Observe for photophobia, fever stiff neck, occipital headaches, nausea , dizziness, and possibly seizures
 - Force fluids to promote dye excretion dehydration will result in severe headache
 - Check with M.D. when withheld medications prior to test may be restarted
 - Observe site for leakage of CSF
 - Bedrest

CVA: Medical Management

Focus on Cause & Control

- #1 cause =
 - Hypertension
 - Medications
- Assess : Neuro Exam, LOC, ICP, Glasgow Coma Scale
- NIH Stroke Scale (assessment tool)
- Prevention
- Acute Stroke
 - Anticoagulants
 - Fibrinolytics
 - Antithrombotics
- Surgery
- Rehabilitation
- Remove cause, prevent complications, and maintain function, rehabilitation to restore function

Reduced LOC:

LOC

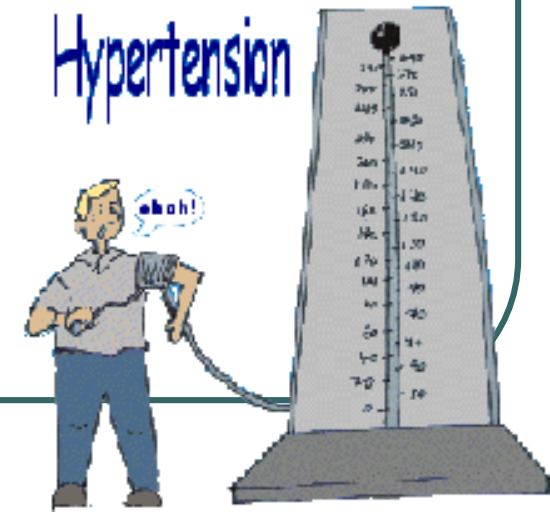
Breathing Pattern

Eye Movements

Motor Responses

Vital Signs

Cushing's Triad



Thrombolytics

Heart and Vascular Plumbing Depot

If you've got a clogged artery, just run these IV and watch them
↑ profusion, ↓ viscosity & aggregation of RBC's.

Our Clot Busters Work!

Administer via an infusion pump immediately after the event

Watch for:
allergic reactions,
spontaneous bleeding,
& oozing from any fresh wound site.

• Streptokinase & Activase (tPA):

Used for MI, ischemic stroke and PE.
May be used to open arteriovenous cannulas.

CVA: Drugs

- Thrombolytic agents

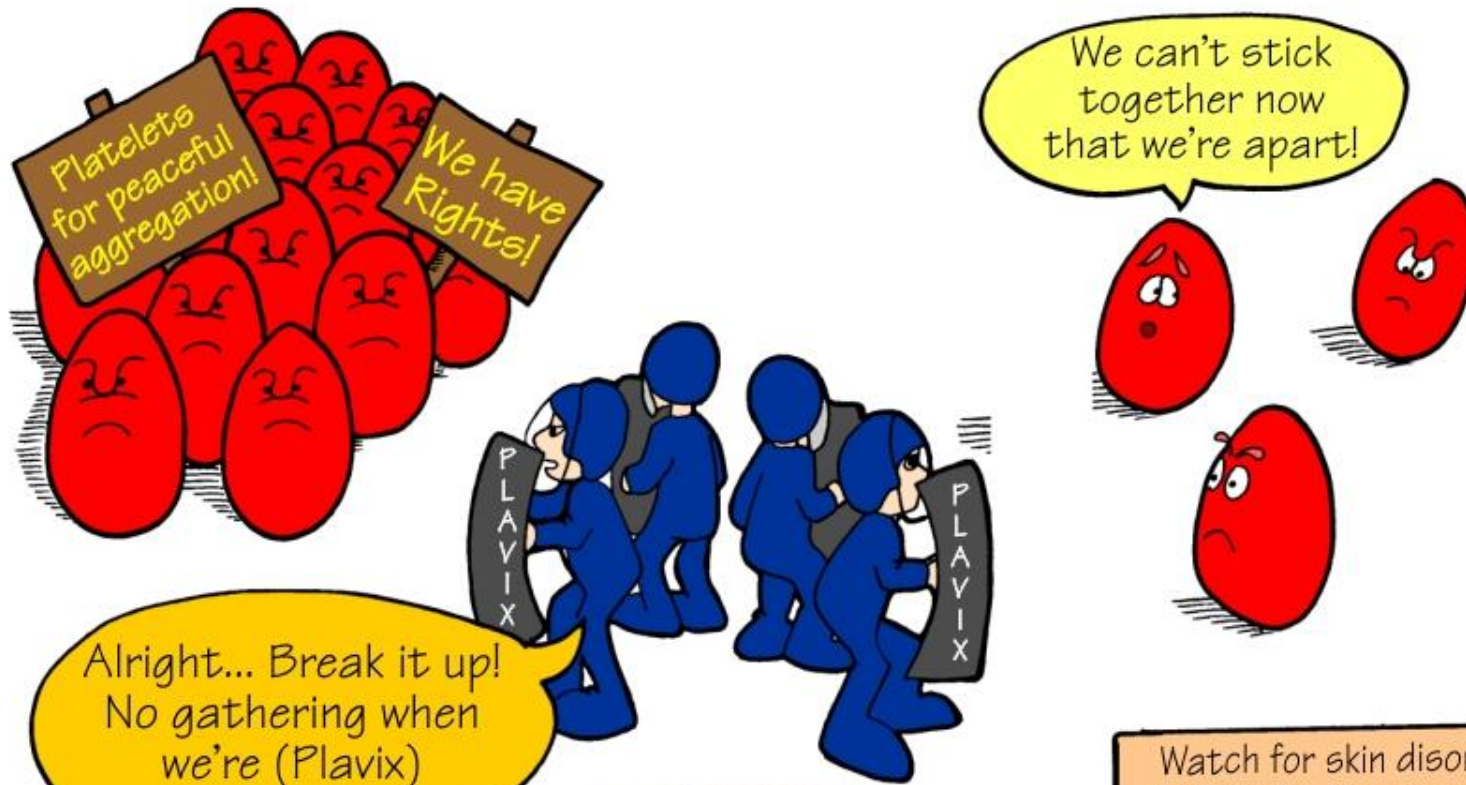
- Action
 - Break down thrombi
- S/E
 - Hemorrhage
- Streptokinase
- Urokinase
- Tissue-type plasminogen activator (tPA)
 - Take in 3 hrs of CVA

- Vasodilators

- Action
 - Relax smooth muscles
- Example
 - Apresoline
- Emergency
 - Hyperstat
 - Nipride

Clopidogrel (Plavix)

“When Platelets Gather Together, Use Plavix for Crowd Control”



Alright... Break it up!
No gathering when we're (Plavix) around.

Plavix works by inhibiting platelet aggregation and by dilating the vascular bed. Used to decrease incidence of vascular clotting MI's, stroke, and acute coronary syndrome.

Watch for skin disorders & URI's, flu-like symptoms. Caution use w/ hypertension, hepatic and renal problems, and history of bleeding.

Platelet counts before beginning and every 2 days for a week, then weekly.

antiplatelets



CVA: Rx - HTN



- Beta-blockers

- Action
 - Block sympathetic response
- Example
 - Propranolol hydrochloride

- Central acting Anti-hypertensive

- Action
 - ↓ Cardiac output
 - ↓ Heart rate
- Example
 - Catapres

CVA: Other drugs

- Antacids
 - Maalox
 - Tums
- Histamine antagonist
 - Tagamet
 - Zantac
- Pain
 - Codeine

Steroids

osmotic diuretics

seizure control

Stool softners

CVA: Prevent clot formation

- Prevent clot formation
 - Meds / anticoagulants
 - Coumadin
 - Antidote?
 - Vit K
 - Heparin
 - ASA
 - Non-Rx
 - Ted hose
 - ROM
 - Isometric exercise

CVA: Surgical Management

- Craniotomy (Surgical removal of clot)
 - Evacuate clot
- repair of aneurysm
- carotid endarterectomy (Carotid stenosis)
- balloon angioplasty
- Endarterectomy

CVA: Monitoring and Airway

- Monitor for trouble

- VS
 - Rectal temp
 - **NO**
- I&O
- Labs
 - Na
 - K
 - Glucose
 - ABG's
 - PT/PTT
- Pulse oximetry

- Airway

- Patent
- ✓ reflex
- O2
- Suction
- Mech vent

TIA

Treatment

- Control hypertension
- Low sodium diet
- Possible anticoagulant therapy
- Stop smoking

Nursing Assessment

- Identify the patients needs
- **Neuro checks**
- Assessment of history from family
- Patient history
- Nursing observations

Nsg Diagnoses

- Ineffective tissue perfusion: cerebral
- Ineffective Airway Clearance
- Impaired physical mobility
- Self-care deficits
- Impaired verbal communication
- Impaired swallowing
- Self-care deficits

Nsg Diagnoses

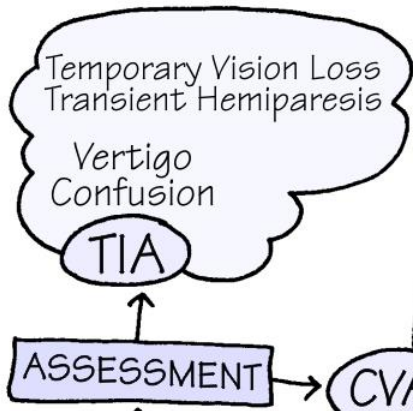
- Disturbed sensory-perceptual deficits
- Impaired urinary elimination
- Risk for constipation
- Risk for impaired skin integrity, swallowing
- Interrupted family processes

Potential Complications

- ↓ cerebral blood flow
- ↑ ICP
- Pneumonia
- Vasospasm
- Seizures

Reversible	Partially Reversible	Non Reversible
Smoking	↑BP	Sex
Obesity	Cardiac Valve Disease	Age
↑ Salt Intake	Dysrhythmias	Race
Sedentary Life	Diabetes Mellitus	Heridity
↑ Stress	↑ Cholesterol	
O.B.C.		

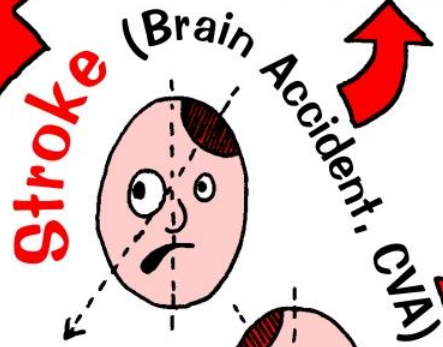
RISK FACTORS



- Hypotonia Hypertonia
- Perceptual Defects
- Apraxia
- Loss of Voluntary Movement On One Side
- ↓ Neuromuscular Control
 - Resps
 - Swallow - Cough
 - Bladder - Bowels
- Communication Problems
- Emotional Lability
- Impaired Judgment and Memory

DIAGNOSTICS

- Neuro Exam
- LP
- CT and Brain Scan
- MRI



- LEFT HEMISPHERE CVA
- Right-Sided Weakness
 - Aphasia

CAUSES

- Atherosclerosis
- Thrombosis
- Embolism
- Cerebral Hemorrhage (Tissue Damage/Trauma)

NURSING GOALS

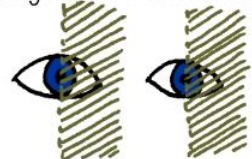
- Airway - Oxygenation
- ↓ ICP
- Nutrition
- Preserve Function
- Rehabilitation
- Safety
- Education

PUPILLARY ABNORMALITIES

- Typically Larger on the Side Opposite the Lesion
- Conjugate Deviation (Looks toward lesion)
- Homonymous Hemianopsia

RIGHT HEMISPHERE CVA

- Left-Sided Weakness
- Perceptual Deficits (Vulnerable to Accidents)



Alt. tissue perfusion r/t ↑ ICP

- Monitor ICP
- Avoid act that ↑ ICP
- ↓ ICP
 - O₂
 - Mech vent
 - Position
 - HOB ↑
 - Activity
 - Rest
 - Meds
 - Diuretics
 - Glucocorticoids
 - Monitor
 - BP
 - Systolic < 180
 - Diastolic < 100

Risk for injury r/t seizures, repeat CVA

, unilateral neglect or falls

- Padded side rails
- Call light
- Assist w. amb.
- Suction
- BR assist
- Items w/in reach
- Clear path
- H2O temps
- Turn & position

● **Prevent Seizures**

- Precaution
- Meds
- ↓ stimuli

Altered Nutrition: less than body requirements related to dysphagia and fatigue, impaired swallowing, Motor deficits, impaired judgment

- NGT
 - SLP
 - Swallow eval
 - HOB high fowlers
 - Straws – no
 - Thick liquids
 - Swallow twice
 - ✓ pocketing food
- Wt daily
- Mouth care
- Clean and care for dentures
- Place food in patients visual field do patient can see food
 - Talk & eat – NO
 - Easy chew, Small meals
 - Head position
 - Unaffected side of tongue
 - ✓ gag and choking
 - High texture food
 - Sodium ↓
 - Fat ↓
 - Potassium ↑
 - Stimulants ↓
 - Fluids ↓

Alt./ impaired physical Mobility r/t neuro deficits

- Begin on admit
- Turn q2hr
- Pillows
- P skin
- ROM
- Splints
 - Hand & fingers
 - Arm
 - Legs
- Footboards
- Built-up utensils
- Raised toilet
- W/in reach
- Pt. to do exercises

Prevent complications
ROM
PT/SLP
Isometric exercise

-
- Neuro checks q2-4h
 - Explain the need for regular exercise program
 - ROM to all joints q2-4h foundations pg 243-244
 - Use assistive devices
 - Protect the affect side from injury
 - Protection from falling
 - Turn q2h

Ineffective breathing pattern related to neuromuscular impairment

- Maintain patent airway
- Suction as needed
- Elevate HOB 30-60-degrees
- Have trach set ready
- Provide O2 with humidity
- V/S with neuro cks q2h
- Oral hygiene q2h
- Lubricate lips
- Maintain bed rest
- Keep unconscious pt in lateral position to allow secretion drainage
- Monitor for S/S pulmonary emboli
 - Chest pain, SOB,
- Monitor ability to swallow

Risk for alteration in body temperature

- Asses rectal temp
q2h
- Use external heating
or cooling blankets

Risk for aspiration

- Maintain NPO
- Position Pt on side:
turn q2h
- Provide N/G
feedings
- Monitor IV fluid

Altered patterns of urinary elimination

- 1. Oliguria-urinary retention
 - Provide indwelling catheter
 - Monitor I&O qh
- 2. Incontinence
 - Wash dry and inspect skin
 - Implement measures to prevent decubitus ulcers
 - Implement bladder training

Bowel incontinence/constipation

- Incontinence

wash dry and inspect skin

Implement measures to prevent decubitus ulcers

Implement bowel training

- Constipation

- Record bowel movements

- Provide stool softeners, laxatives and enemas

- Check for impaction

- Increase fluid intake

- Increase Fiber in diet

- Increase activity

Impaired Communication r/t aphasia

- SLP
- Time
- Anticipate
- Call bell
- Slow & clear
- Face patient
- Eye contact
- Yes/No ?
- ID methods
- Gestures
- Visual aids

Impaired Communication

- Assess communication patterns
- Provide calm environment with minimal distraction
- Use touch to increase attention
- Use familiar music to enhance recall
- Simple verbal commands
- Communication boards
- Pen and paper
- Gestures eye blinks

Knowledge Deficit r/t new diagnosis

- Orient
- Explain
- K.I.S.S.
- Written, verbal & picture
- Little at a time
- Meds
- Safety

Self-Care Deficit r/t eating

- Non-skid mats
- Stabilizer plates
- Plate guards
- Wide grip utensils



Self-Care Deficit: Bathing & Grooming

- Long handle sponge
- Grab bars
- Non-skid mats
- Hand held showers
- Electric razor
- Shower seat



Self-Care Deficit: Toileting

- Raised seat
- Grab bars



Self-Care Deficit: Dressing

- Velcro
- Elastic shoelaces
- Long-handle shoehorn



Self-Care Deficit: Mobility

- Canes
- Walkers
- Wheelchair
- Transfer devices

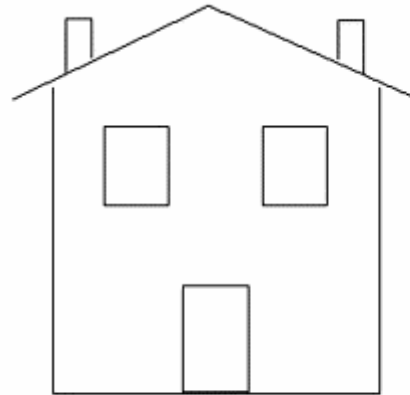


Risk of care-giver role strain

- Support systems

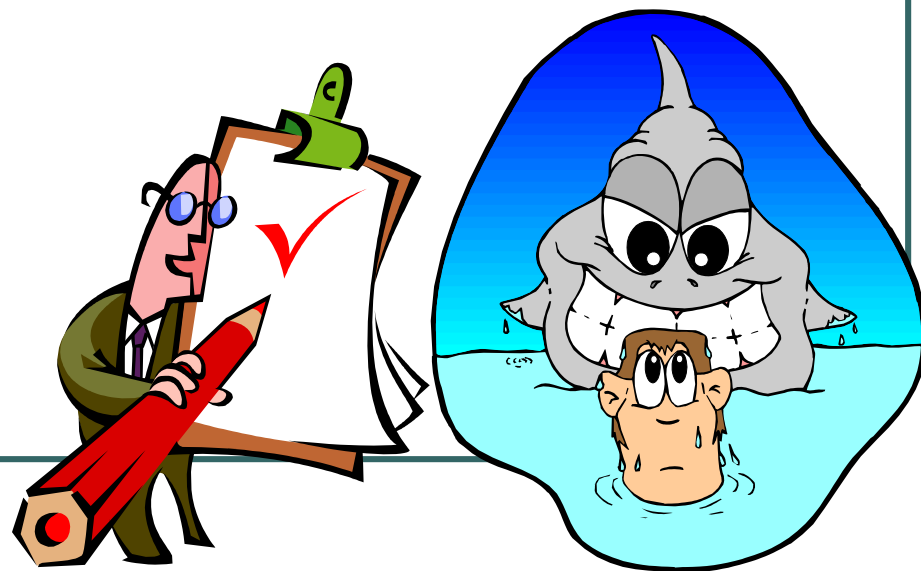
Unilateral neglect

- Unaffected side
 - Personal items
 - Approach
 - Door face
- Cue
- Scan environment
- Sling



Impaired thought processes

- Family
- KISS
- SS&TTP
- ↓ distractions
- Repeat
- Visual reminders
- Time
- Simple → complex
- Positive feedback
- Non-judgmental





FUN **C** TIONING
V S
A FFECTED



Assist CVA client
to get out of bed
on the functioning
vs affected side.

Risk for injury/infection related to fixed eyes (no blinking)

- Protect with eye shields
- Remove dry exudate with warm saline
- Close eyes
- Inspect for inflammation

Brain Attack - Rehabilitation

- Recovery and Rehabilitation
- Continuing Care
 - Emotional problems
 - Support groups
 - Caregiver strain
- Family support
- Begin discharge teaching
- Physical therapy
- Speech therapy



Client with CVA

- A 72 year old woman is admitted to the acute care facility after her family finds her in an unconscious state early this morning. The assessment reveals no history of hypertension or other health problems. She complained of a headache on the day prior to admission. VS-BP150/96,P-56,R-16,T-101degrees, Glasgow Coma Scale -5. DX- CVA

-
- **Prioritize the following nsg interventions:**
 - Monitor Temp
 - Assess neurological status
 - Assess respiratory status
 - Elevate HOB to 45 degrees(High Fowlers)
 - **The client begins to seize as her condition worsens. ID 3 nursing interventions essential at this time.**

-
- What signs, other than seizures, should alert the nurse the client is developing increased intracranial pressure (ICP)?
 - After determining the client has suffered extensive cerebral damage, the health care provider writes a DNR order per family request. List 3 appropriate nursing interventions at this time.