Cerebrovascular Accident

ACUTE CARE PART 2

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?’

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

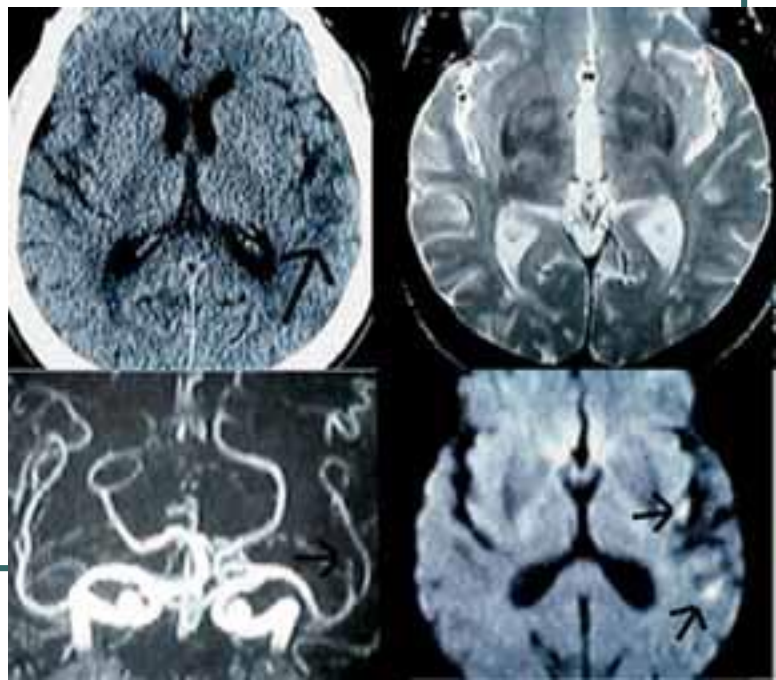
- Answer question that the patient may need clarification
- Diet orders –NPO???
- Special room or equipment used
- Special medications required for test
- An informed patient will be more cooperative
- Nursing assessment
- Baseline vital signs and neuro cks
- Know level education to develop an individualized teaching plan
- Determine awareness of actual or potential medical diagnosis
- Determine previous experence 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 tunel
  - 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 Inventions
  - 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 subarachnoidd space via a lumbar puncture: performed to locate lesions of the spinal column or ruptured vertebral disk

Myleogram

- 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

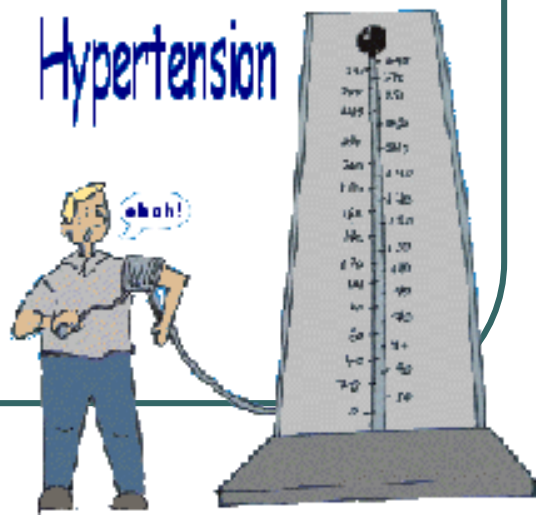
CVA: Medical Management

Focus on Cause & Control

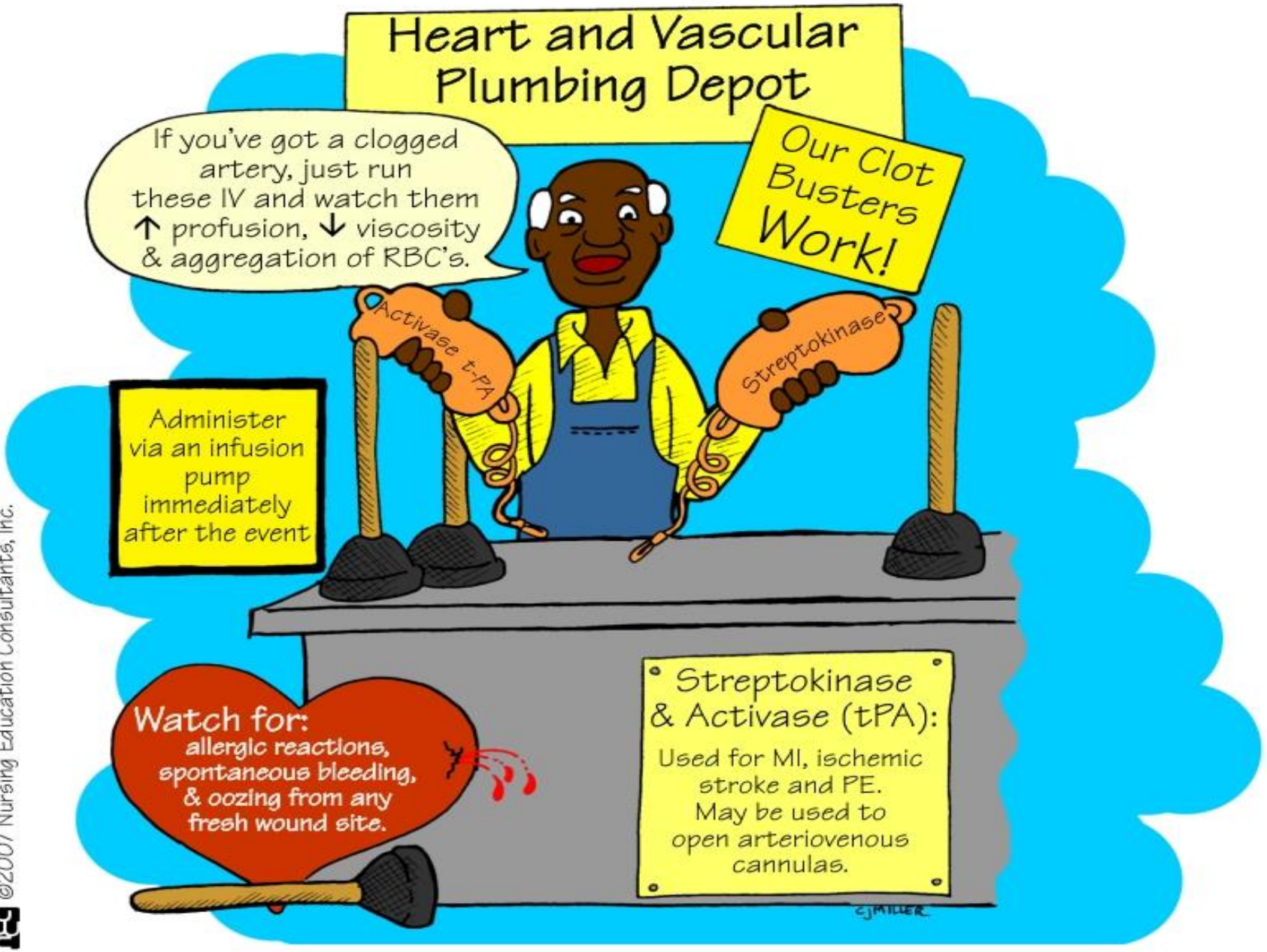
- #1 cause =
  - Hypertension
  - Medications
- Assess : Neuro Exam, LOC, ICP, Glasgow Coma Scale
- NIH Stroke Scale (assessment tool)
- Prevention
- Acute Stroke
  - Anticoagulants
  - Fibrinolytics
  - Antithrombotics
- Surgery
- Rehabilitation
- Remove cause, prevent complications, and maintain function,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

Reduced LOC:

LOC
Breathing Patte
Eye Movement
Motor Respons
Vital Signs
Cushing's Triac



Thrombolytics

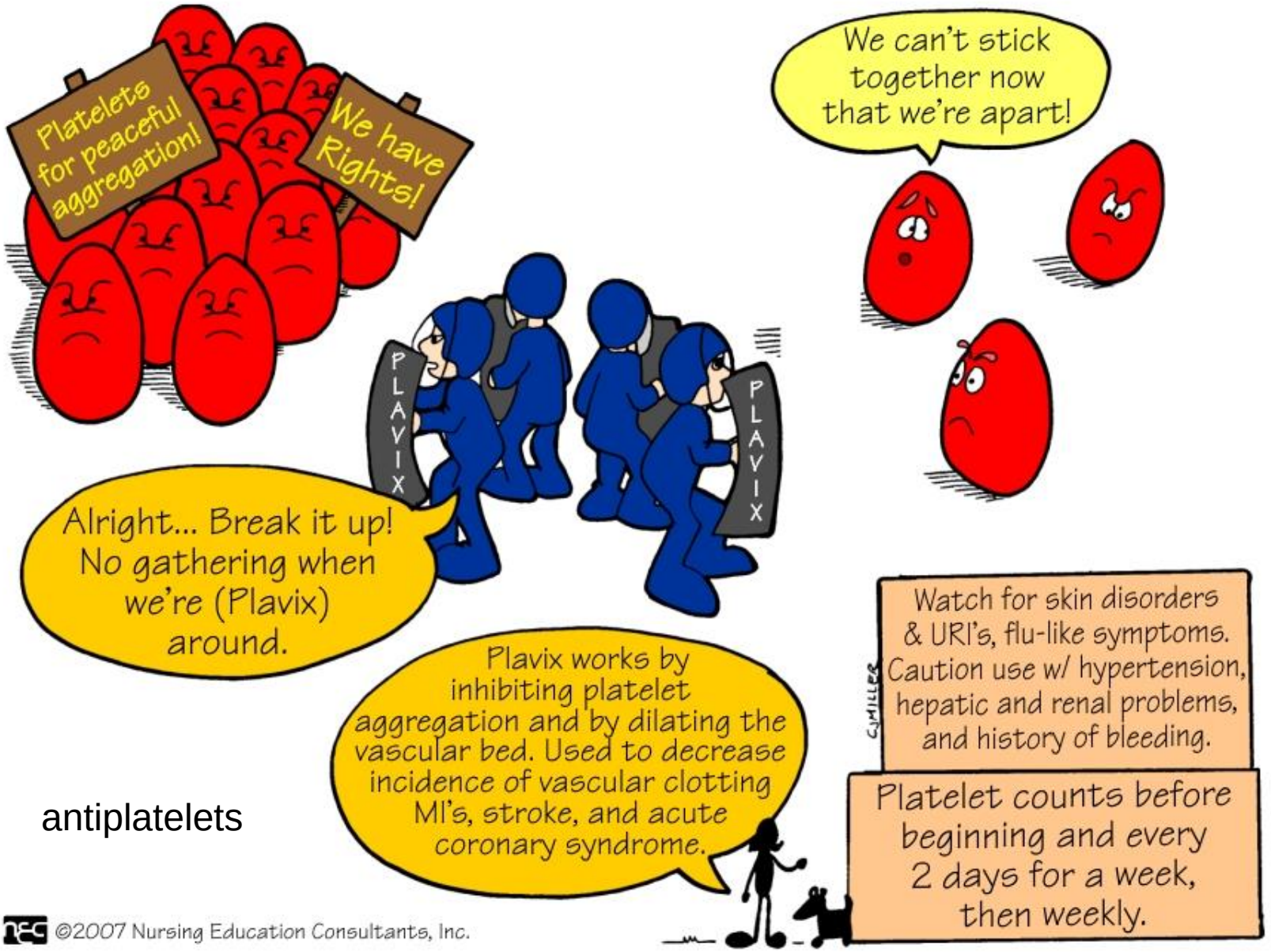


CVA: Drugs

- 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"



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 agioplasty
- 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

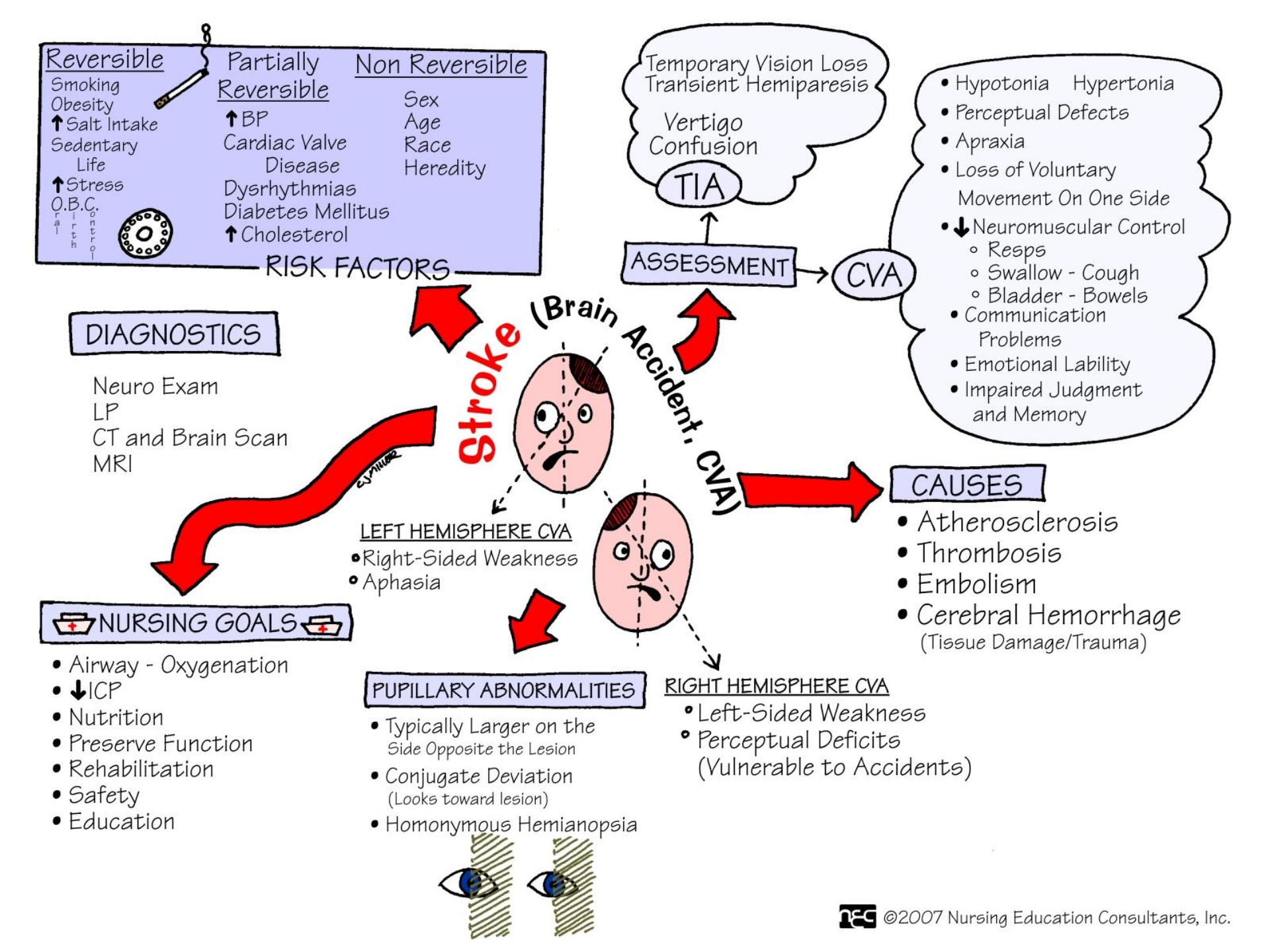
- Ineffective tissue perfusion: cerebral
- Ineffective Airway Clearance
- Impaired physical mobility
- Self-care deficits
- Impaired verbal communication
- Impaired swallowing
- Self-care deficits

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
- I ICP
- Pneumonia
- Vasospasm
- Seizures



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./ imparied 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. Oligura-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 softners, 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

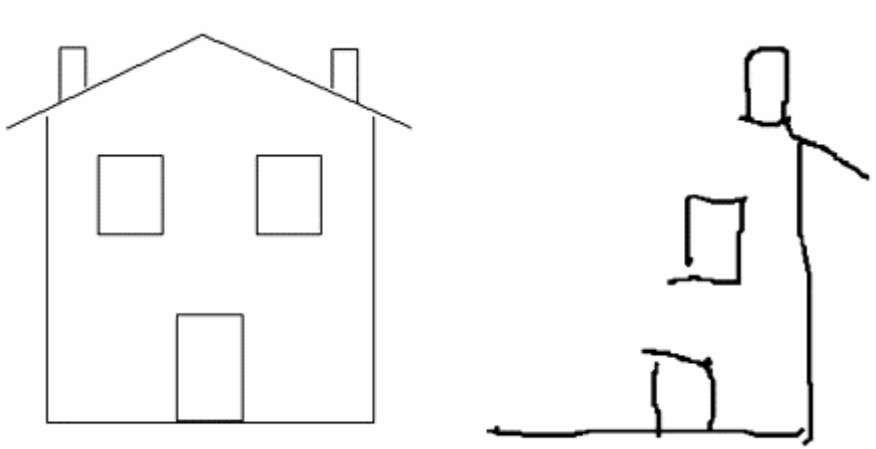
- Canes
- Walkers
- Wheelchair
- Transfer devices

Risk of care-giver role strain

- Support systems

Unilateral neglect

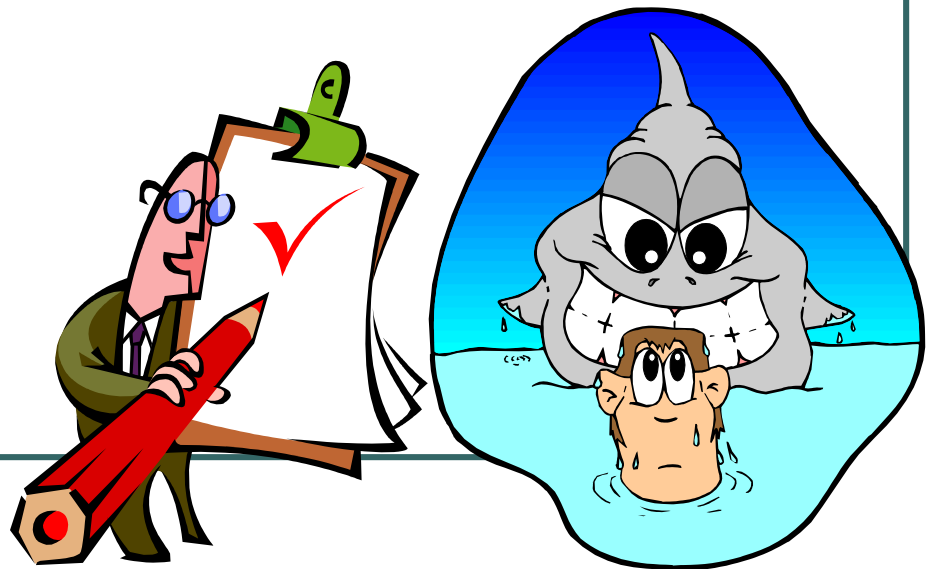
- Unaffected side
  - Personal items
  - Approach
  - Door face
- Cue
- Scan environment
- Sling



Impaired thought processes

- Family
- KISS
- SS&TTP
- ↓ distractions
- Repeat
- Visual reminders

- Time
- Simple → complex
- Positive feedback
- Non-judgmental



FUN**C**TIONING
VS
AFFECTED

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.

References

- Medical Surgical Nursing in Canada
- Peer Reviewed Journal Articles
- Evidence Based Practice Guidelines
- Integrative Case Study Scenarios