

# Stroke

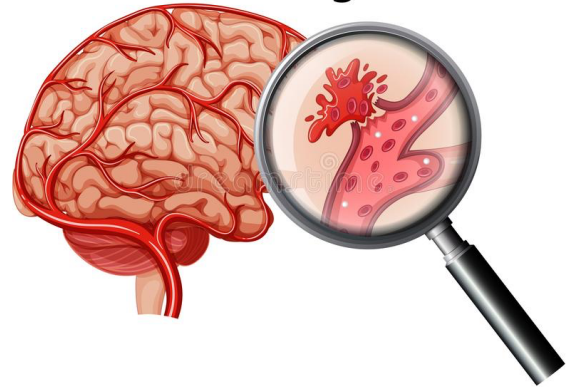
## Pathophysiology

### Ischemic Stroke



- "thrombotic or embolism"
  - ↳ thrombosis: Clot formed on the artery wall
    - gradual onset
  - ↳ embolism: Clot left part of body
    - fast onset
- Blood flow is cut off leading to ischemia
- more common in men
- warning signs: "TIA" or transient ischemic attack
  - ↳ No brain damage occurs with these attacks

### Hemorrhagic Stroke



- "intracerebral vs. subarachnoid"
  - ↳ intracerebral: Bleeding inside the brain
    - sudden onset
  - ↳ subarachnoid: Bleeding in the subarachnoid space
    - fast onset
- this is a ruptured artery
- collection of blood leads to increased ICP
- more common in women
- warning sign "worst headache of my life"

## Treatment

### Surgical Options

- Carotid Endarterectomy: Remove plaque to open up diameter of blood vessel
- Transluminal Angioplasty: go in and have a balloon push plaque against vessel wall
- Stenting: keep blood vessel open

### TpA : fibrinolytic therapy

- window 3-4.5hr
- Clot Buster
- BP 160 - 180
- Anticoagulant After Stable
  - ↳ 325mg Aspirin
- Statins: Cholesterol med
  - ↳ monitor liver function

### TpA practice questions

③ If it was confirmed the pt had right-sided ischemic stroke. the pt is ordered tpa. the hospital protocol is to infuse 0.9 mg/kg over 60 min @ 10% of the dose given as a bolus over 1 min available is tpa 100mg/100mL

How many mg will the pt receive as their bolus dose?

178 lbs	1kg	0.9mg	.01	
	2.20 lb	1kg	1min	= 7.28 over 1min

④ It was confirmed the pt had a right-sided ischemic stroke. the pt is ordered tpa. the hospital protocol is to infuse 0.9 mg/kg over 60 min with 10% of the dose given as a bolus over 1 min. available is tpa 100mg/100 mL

what will the nurse set the IV rate to for the remaining dose?

$$10.9 \times 0.9 = 72.8 - 7.28 = 65.6$$

### NO tPA

- recent GI bleed - 3m.
- major surgery: 14 days out
- internal bleeding: 22 days
- hemorrhagic stroke

## Clinical manifestations

Facial drooping: uneven smile

Arm weakness, typically unilateral

Speech difficulty: slurred speech

Time to call 911

• **Right sided stroke** think peckles

• **Left sided stroke** think languages

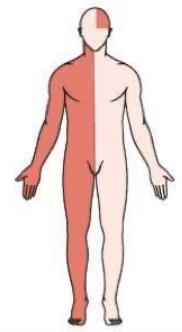
• **BROCA'S area** \*Big mouth\*  
↳ expressive: comprehends speech  
but cannot speak back

• **WERNICKE'S area**  
• receptive, unable to comprehend speech



Right-brain damage (stroke on right side of the brain)

- Paralyzed left side: hemiplegia
- Left-sided neglect
- Spatial-perceptual deficits
- Tends to deny or minimize problems
- Rapid performance, short attention span
- Impulsive; safety problems
- Impaired judgement
- Impaired time concepts



Left-brain damage (stroke on left side of the brain)

- Paralyzed right side: hemiplegia
- Impaired speech-language (aphasias)
- Impaired right-left discrimination
- Slow performance, cautious
- Aware of deficits: depression, anxiety
- Impaired comprehension related to language, math

## Risk factors

- African American X2 likely than Caucasian
- Risk increases w age
- TIA is a stroke predictor
- Hypertension  
↳ WANT BP BELOW 140
- Heart disease  
↳ a-fib (increases chances of blood clots)
- Smoking
- Obesity
- Sleep apnea
- Metabolic syndrome
- Poor diet
- Drug/alcohol use

## Diagnostic tests

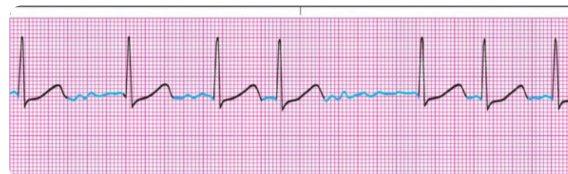


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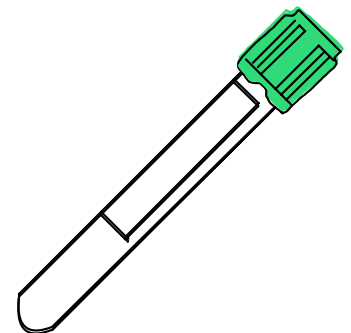
CT scan is the **Golden Standard**

• allows you to know what kind of stroke pt is experiencing

• CT Angiography: looks at blood vessels



- Cardiac workup
- Remember A-fib is a risk factor for strokes



## Lab tests

- CBC / CMP
- Electrolytes  
↳ glucose elevates at times of stress
- Lipid profile  
↳ cholesterol / vascular health
- Kidney / liver  
↳ perfusion

- mri gives you a more in-depth look
- done after ct if needed

## Nursing Interventions

Pt Goals:

1. maintain stable or improved LOC
2. achieve maximum physical level of functioning
3. attain maximum self care abilities & skills
4. maintain stable body functions
5. maximize communication abilities
6. maintain adequate nutrition
7. avoid complication of stroke
8. maintain effective person & family coping

## Teaching

### Communication w Aphasia

1. decrease environmental stimuli
2. treat pt like an adult
3. speak at normal volume & tone
4. simple questions (yes/no)
5. let them speak: do not interrupt
6. make use of gestures
7. do not pretend to understand
8. make use of gestures
9. don't push communication
10. follow a familiar routine

## Complications

- complication from surgery
  - ↳ stent occlusion
  - ↳ hemorrhage (hypotension / tachycardia)
- increased intracranial pressure
  - ↳ SIS: Restlessness, irritability, agitation, headache, altered LOC
  - ↳ treatment: elevate HOB, decrease suctioning
- VTE
  - ↳ Blood clot
  - ↳ prevention: SCD pumps, Blood thinners & increase ROM/movement

### Stroke prevention

- Reduce salt / sodium intake
- maintain a normal body weight
- Low saturated fat ↑ fruit & veggies
- Limit Alc. use
- maintain BP ↓ 140
- exercise 40 mins 3-4 times wky
- avoid cig/tobacco products
- follow treatment plan for ♥ problems
- maintain normal glucose levels & control diabetes