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|  | **Patho, Problem, Plan: Ischemic CVA** |  |
| **Pathophysiology** | **Signs/Symptoms** | **Nursing Care** |
| **Etiologies/ Risk Factors:** Diabetes Mellitus, Smoking, HTN, Hyperlipidemia, Atrial fibrillation, Oral contraceptivesDamage to endothelium of large arteryPlaque formation (fat, cholesterol, Ca+)Atherosclerosis ( hardening/ thickening of arteries) Endothelial damage/ *inflammatory response triggered* Endothelial lumen size reducedPlaques become weak and ruptureNarrowing/occlusion of arteryCerebral ischemia/ neuronal deathToxin released by necrotic cells damaging BBBCerebral death/increased ICP | Elevated HgB A1C, high LDL, high VLDL, low HDL, High Platelet count, high triglyceridesElevated CRPS/S depend upon which area of the brain is affected:**Carotid System:****Middle Cerebral Artery (80%):** Aphasia, dysphasia, hemiparesis face, arm, leg (more severe in face and arm)**Anterior Cerebral Artery:** Weakness/paralysis of foot and leg, incontinence**Posterior Cerebral Artery:** Homonymous hemianopsia**Basilar system****Basilar/vertebral artery (80% mortality)(Brainstem/cerebellum):** Dizziness/ blurred vision, loss of balance Impaired LOC, hypoventilation, bradycardia, hypotension, pupillary abnormalities | **Priority Assessments:**1. Airway (decreased LOC, loss of cough reflex, dysphagia)
2. Breathing (RR/effort/quality/breath sounds/ O2 sat)
3. Circulation (HR/ BP)
4. FAST: Face, Arms, Speech, Time
5. NIHSS- Score up to 40; higher score, more severe stroke
6. Comprehensive neuro assessment: GCS, MS, Pupillary responses, Motor function (grips/legs), Sensory (pin prick), One-sided neglect
7. Aphasia (speech difficulty), Apraxia (inability to perform tasks), hemianopsia

**Priority Interventions:**1. Airway/ breathing: HOB 30 degrees, aspiration precautions, O2 as needed
2. Permissive HTN (220/110)- Decrease VERY SLOWLY
3. Accucheck! (Hypoglycemia can mimic CVA)
4. Reduce ICP: Avoid restraints, NO HYPOTONIC IVF, nutrition (protein deficiency increases cerebral edema), limit suctioning, prevent hyperpyrexia
5. Seizure precautions, fall precautions

**Priority diagnostics:** 1. CT scan, 2. Cerebral angiography |



**KEY POINTS:**

* **#1 cause of ischemic CVAs:** Atherosclerosis
* **Modifiable risk factors to slow progression of atherosclerosis:** Increase activity (30 minutes, 5x/week), manage DM II, weight management, low fat/low cholesterol/high fiber diet (DASH), manage HTN, lower cholesterol, STOP SMOKING!
* **Middle Cerebral Artery (MCA)** most commonly affected artery and supplies a LARGE part of the cortex\
* **Penumbra** is the area surrounding the infarcted tissue; we have 3 hours from s/s onset to save the penumbra with thrombolytics!
* Teach the public the FAST (face, arms, speech, time) assessment
* **KNOW absolute contraindications to thrombolytics (**Really high BP, recent surgery, recent IC hemorrhage, previous ischemic CVA within last 3 months)
* CT within 30 minutes of arrival to hospital; next diagnostic study of choice is cerebral angiography if CT is negative.
* Keep in mind that 80% of s/s of CVA are due to cerebral edema so perform interventions to decrease ICP!
* SAFETY SAFETY SAFETY! Risk for aspiration and falls!

Reference: www.medscape.com

Client arrives to ED with the following manifestations: Slurred speech, confusion to time, and left sided weakness. Client has a history of HTN and previous ischemic CVA one month ago. VS are: T37C, HR 80 BPM, BP 180/ 98 mmHg, O2 sat 97 %.

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| **Actions to take (Choose 2)** | **Potential Condition** | **Parameters to monitor (Choose 2)** |
| Obtain informed consent for thrombolytics | Meningitis | Pupillary responses |
| Check a blood glucose | Pheochromocytoma | Peripheral edema |
| Transport the client to CT | Right sided CVA | Long term memory recall |
| Administer ASA 81 mg PO |  | Q15 BP |
| Ask the client to repeat 5 words from recall |  | Capillary refill |

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