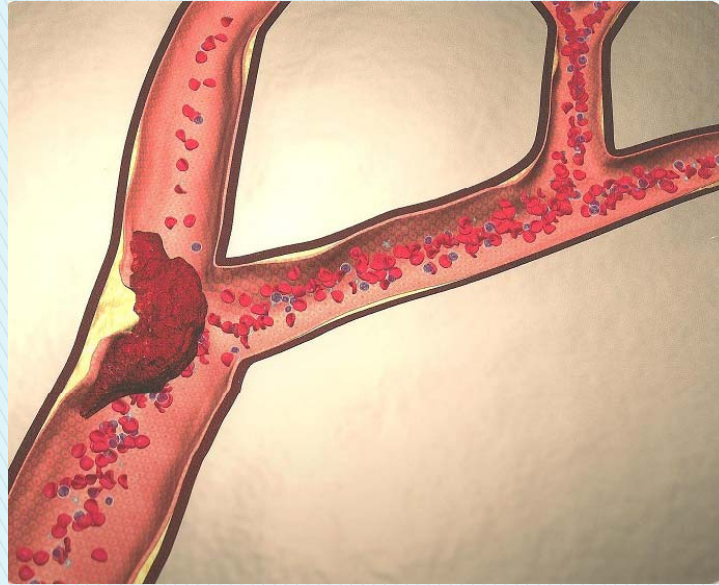


STROKE

Michael J. Carunchio MD

- ▶ 3rd most common cause of death after MI and cancer
- ▶ 2nd most common cause of dementia after Alzheimers
- ▶ ½ million strokes occur annually in U.S.
- ▶ 150,000 deaths
- ▶ ¾ in people over 65
- ▶ Risk doubles each decade after 55
- ▶ Males > females up to 84. then females > males
- ▶ African Americans > Hispanics > Caucasians

- ▶ Malfunction of part of brain when insufficient flow of blood to that part (glucose and O₂)



- ▶ Main causes:
thrombosis, embolism, hemorrhage
- ▶ Symptoms depend on location
- ▶ Severity depends on location and amount of tissue compromised

- ▶ How to recognize—ABRUPT ONSET SYMPTOMS
- ▶ Speech difficulty, confusion, weakness, numbness, blurred vision, double vision, hearing loss, dizziness, loss of consciousness, seizure
- ▶ --FAST--face, arm, speech, time

- ▶ What to do---call 911.get to ER ASAP
- ▶ Define dx. If stroke—is pt. candidate for lytics . Is there need for a procedure.
- ▶ Control factors that might make stroke worse—(Bp, glucose, Temp.)
- ▶ Paramedics—Hs. Exam. EKG.glucose. pO2
- ▶ ER—fine tune Hs. Exam. Labs. Scan
- ▶ Labs—CBC,PT,PTT,INR,CHEM.PANEL
- ▶ ??lytic candidate

- ▶ **INCLUSION CRITERIA—**
- ▶ age.>18
- ▶ Onset of symptoms within 3 hrs. of initiation of tx.
- ▶ CT without hemorrhage

- ▶ EXCLUSION CRITERIA–(hs.)
- ▶ Stroke or head trauma in previous 3 months
- ▶ Hs. Prior intracranial hemorrhage
- ▶ Major surgery or other serious trauma in previous 14 days
- ▶ GI or GU bleeding in previous 21 days.
- ▶ LP in previous 7 days
- ▶ Pregnant or lactating female

- ▶ EXCLUSION CRITERIA—(clinical)–
- ▶ Rapidly improving symptoms
- ▶ Sz. At stroke onset
- ▶ Symptoms suggestive of SAH even if CT normal
- ▶ Persistent systolic bp > 185 or diastolic > 110
- ▶ Acute MI or post MI pericarditis (needs further eval.)

- ▶ EXCLUSION CRITERIA—
- ▶ CT evidence of hemorrhage or major stroke



- ▶ Glucose <50 or >400
- ▶ Platelets $<100,000$
- ▶ Anticoagulants with $INR >1.7$ or $PT >15$
- ▶ Heparin within 48 hrs. and elevated APTT

- ▶ Additional considerations—NIH STROKE SCALE
- ▶ Findings on CT STROKE PROTOCOL
- ▶ CT scan
- ▶ CT perfusion
- ▶ CTA

- ▶ Dose—0.9mg per kg body wt. max—90mg
- ▶ 10% infused over 1 to 2 minutes. Remainder over 1 hr.
- ▶ Major risk—brain hemorrhage—6.4% vs. 0.6%
- ▶ Complete recovery or 4 pt improvement on nih stroke scale in 31 to 50 % compared to 20 to 38 %(624 pts.)

- ▶ Procedures—clot retraction. Local installation of intraarterial tpa
- ▶ After tpa—close monitoring in icu. Attention to neuro checks, bp et al.
- ▶ No antiplatelet agents for 24 hrs.

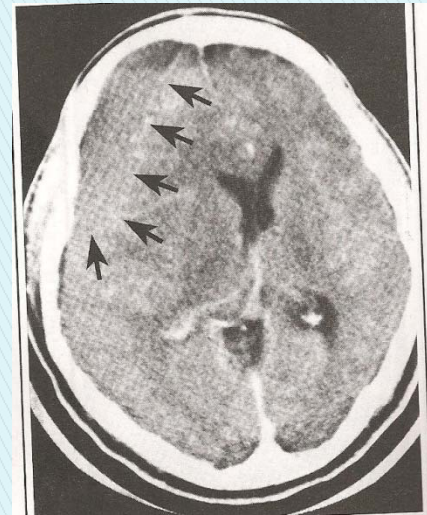
- ▶ If not tpa candidate—t/c asa, plavix, aggrenox.
- ▶ Proceed with additional stroke workup
MRI,MRA,carotid ultrasound,transcranial doppler study,echocardiogram, lipid profile ,look for hypercoagulability
- ▶ Address risk factors—
bp,dm,hyperlipidemia,tobacco, excessive use alcohol,substance use,obesity.

- ▶ Unusual causes of stroke—
- ▶ Vessel dissections
- ▶ Fibromuscular hyperplasia
- ▶ CADASIL
- ▶ Hypercoagulability
- ▶ Migraine
- ▶ Oral contraceptives
- ▶ Tumor, fat, air emboli
- ▶ Moyamoya
- ▶ Metabolic disorders—melas
- ▶ Infections—septic emboli, meningitis

- ▶ Not all abrupt onset neurological deficits are due to stroke—
- ▶ Seizures, subdural, tumors, migraine, MS.

- ▶ Most strokes are due to emboli

- Hemorrhagic strokes---due to rupture of small arterioles in chronic hypertension. Vascular anomalies—AVM. Amyloid Angiopathy



- ▶ Clues re etiology—
- ▶ Thrombotic—stuttering or stepwise progression
- ▶ Embolic—sudden deficit maximum at outset
- ▶ Hemorrhagic—headache and vomiting more common. Hypertension more typical at outset.
- ▶ Lacunar strokes—pure motor deficit. Pure sensory deficit. Clumsy hand and dysarthria. Ataxia with crural paresis.