# Brain Attack Orders

for use only in the Emergency Department

### Patient Weight (kg):

- Reported
- Estimated
- Measured

**One IV, ≥18 gauge, R arm preferred, NS at KVO**

- O2 2 lpm nasal; increase as needed to keep oxygen saturation > 95%
- Continuous pulse oximetry and cardiac monitor
- EKG, Stat portable CXR, non-contrast head CT scan
- VS Q5min x 15 min, then Q15min while in ED; and PRN

(in and out catheterize if unable to void within 20')

- Bedside Urinalysis, UCG if f < 50
- Bedside Glucose;
- Urine Tox Screen;
- PT / PTT, CBC, BMP (Chem-7), Fibrinogen Level, Type and Screen

- aspirin suppression assay if on aspirin or AGGRENOX (aspirin/dipyridamole)
- Plavix (clopidogrel) suppression assay if on Plavix (clopidogrel)

**Use DEM NIH Stroke Scale Worksheet**

- graphics for testing patient

### Level of Consciousness

| LOC Questions | 0-alert | 1-easy to arouse | 2-hard to arouse | 3-reflexes/unresponsive |
| LOC Commands | 0-month/age right | 1-one right | 2-neither right |
| Best Gaze | 0-normal | 1-partial palsy | 2-forced deviation |
| Visual | 0-normal | 1-partial one eye | 2-partial both eyes | 3-blind |
| Facial Palsy | 0-normal | 1-minor | 2-partial | 3-complete |
| Motor Arm, Left | 0-no drift | 1-drift | 2-some effort | 3-no effort | 4-no movement UN-cannot |
| Motor Arm, Right | 0-no drift | 1-drift | 2-some effort | 3-no effort | 4-no movement UN-cannot |
| Motor Leg, Left | 0-no drift | 1-drift | 2-some effort | 3-no effort | 4-no movement UN-cannot |
| Motor Leg, Right | 0-no drift | 1-drift | 2-some effort | 3-no effort | 4-no movement UN-cannot |
| Limb Ataxia | 0-normal | 1-one limb | 2-two limbs | UN-cannot |
| Sensory | 0-normal | 1-mild/moderate | 2-severe/total |
| Best Language | 0-normal | 1-mild/moderate aphasia | 2-severe | 3-mute |
| Dysarthria | 0-normal | 1-mild-moderate | 2-severe | UN-intubated |
| Extinction and Inattention | 0-normal | 1-inattention/extinction | 2-profound hemi-inattention/extinction |

### NIH Stroke Scale:

**Resident/PA/CRNP**

| Print Last Name: | Order Start Date: | Sign: |
| Print Last Name: | Order Start Date: | Sign: |

**ED Attending physician (required):**

| Print Last Name: | Sign: |
| Print Last Name: | Sign: |

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### Are patient’s neuro symptoms from an intracranial bleed?
- **Yes** □ Skip to † Intracranial **Bleed**, page 6
- **No** □

### Does patient need a **stat** CT angio head/neck?
**Indication:** NIHSS ≥4, sx <8 hrs
**Contraindications:**
- Anaphylactic dye allergy
- If history of non-anaphylactic dye reaction (e.g., flushing, vomiting) order dye reaction prophylaxis prior to CTA
- **Yes** □
- **No**

### Does patient need a **stat** MRI/MRA head/neck?
**Indications:**
- NIHSS ≥4, sx <8 hrs and anaphylactic dye allergy
- **Yes** □
- **No**

### Does patient need an **urgent** CT angio head/neck?
**Indication:**
- NIHSS 1-3, or sx >8 hrs
- **Yes** □
- **No**

### Does patient need an **urgent** MRI/MRA head/neck?
**Indication:**
- NIHSS 1-3, or sx >8 hrs
- **Yes** □
- **No**

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**Dye reaction protocol:**
- famotidine (Pepcid) 20 mg IV
- + diphenhydramine (Benadryl) 50 mg
- + methylprednisolone (Solumedrol) 125 mg IV

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**Stat CT angio head/neck, stroke protocol (don’t wait for creatinine)**
**Stat MRI/MRA (MR angiogram) head/neck, stroke protocol**
**CT angio head/neck, stroke protocol (wait for creatinine)**
**MRI/MRA (MR angiogram) head/neck, stroke protocol**

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### Does patient need an insulin drip?

**Indication:** bedside or lab glucose >200 mg/dL

- **Yes**
- **No**

*Insulin infusion*  
Usual is 2 units/hr, more if glucose is very high
- Glycemic goal is 120-200: alert physician if <120 or > 200.
- While on insulin drip, check Q 1 hour fingerstick blood sugar.
- Regular human insulin, 250 units in 500 mL of normal saline (1 unit = 2 mL).
- Flush 50 mL through IV line before connecting to patient.
- May piggyback only at Y injection port below pump.
- If piggybacking, use dual IV pump.

### Does patient need fever management?

**Indication:** temperature >38°C

- **Yes**
- **No**

*acetaminophen*  
Usual is ≈15 mg/kg PO; 1000 mg for 70 kg adult; best in multiples of 325 or 500 mg

*or if patient fails bedside swallowing screen, acetaminophen*  
Usual is ≈30 mg/kg PO; 2000 mg for 70 kg adult; best in multiples of 120 or 650 mg

*labetalol* (caution if asthma) 5 mg IV over 2 minutes then, 10 mg IV Q 10 minutes PRN  
titrates to systolic BP 160-180, diastolic BP 90-100  
hold if HR < 60

*nicardipine* 0.25 mg IV push, then, 0.25 mg IV Q 5 minutes PRN  
titrates to systolic BP 160-180, diastolic BP 90-100

*nicardipine* drip  
start at 5 mg/hr (usual dose: 1-15 mg/hr)  
titrates to systolic BP 160-180, diastolic BP 90-100

### Does patient need hypertension management?

**Indications:**
- sustained systolic BP >180
- sustained diastolic BP >110
- Goal: SBP 20% below baseline

- **Yes**
- **No**

*Usual is ≈30 mg/kg PO; 2000 mg for 70 kg adult; best in multiples of 120 or 650 mg*

*or, if patient fails bedside swallowing screen, acetaminophen mg PR*
### Thrombolysis Checklist: Absolute Criteria

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute ischemic CVA</td>
<td></td>
</tr>
<tr>
<td>Age ≥ 18 years</td>
<td></td>
</tr>
<tr>
<td>No seizure at onset/reason to suspect SAH</td>
<td></td>
</tr>
<tr>
<td>No known bleeding diathesis</td>
<td></td>
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<tr>
<td>No LMWH or heparin with increased PTT</td>
<td></td>
</tr>
<tr>
<td>No neurosurgery/major head trauma in 3 mo.</td>
<td></td>
</tr>
<tr>
<td>Never any CNS aneurysm, AVM, bleed or neoplasm</td>
<td></td>
</tr>
<tr>
<td>No major surgery or trauma within 14 days</td>
<td></td>
</tr>
<tr>
<td>No LP within 7 days</td>
<td></td>
</tr>
<tr>
<td>No active GI/GU bleeding within 21 days</td>
<td></td>
</tr>
<tr>
<td>BP ≤ 185/110 now</td>
<td></td>
</tr>
<tr>
<td>Platelets &gt; 100,000</td>
<td></td>
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<tr>
<td>INR &lt; 1.8</td>
<td></td>
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<tr>
<td>No hemorrhage on CT read by neuroradiologist</td>
<td></td>
</tr>
</tbody>
</table>

### Thrombolysis Checklist: Relative Criteria

If cannot check all, relative contraindication to systemic thrombolysis

- No rapidly improving neurological status
- Glucose 50-400
- Not pregnant
- No early signs of infarct (edema, sulcal effacement) on CT read by neuroradiologist

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**Does the patient have an ischemic CVA, clearly defined onset within the past 3 hours?**

- **Yes**
  1. Place call to vascular neurologist through TACC (radio or phone x5678) to discuss treatment options.
  2. Start tPA checklists, this page.
- **No**
  Skip to § no tPA, next page
Able to contact vascular neurologist, and vascular neurologist wishes to take patient for intra-arterial procedure?

Yes ☐ Send patient to vascular neurology lab
No ☐ Discuss with patient/alternate decision-maker

Are you ordering tPA for this patient?
- Unable to reach vascular neurologist in reasonable time, meets criteria, consented.
- Vascular neurologist and emergency physician both agree systemic alteplase (tPA) is best option.

Yes ☐ Order tPA →
No ☐

Alteplase (ACTIVASE, tPA) mg

- Start peripheral IVs to total 3 IVs
- Record infusion start/stop time in nurses’ notes
- VS/Limited NIH Stroke Scale q15min during infusion and for 2 hours post-infusion
- No arterial puncture or venous puncture at non-compressible site

Are you ordering tPA for this patient?
- Risks/benefits discussed with patient who gives verbal informed consent for IV tPA
- Risks/benefits discussed with alternate decision-maker who gives verbal informed consent for IV tPA
- Implied consent: patient incapacitated, no other decision-maker immediately available
- Patient/alternate decision-maker makes informed refusal of IV tPA

Alternate decision-maker name and relationship: ___

Patient with likely ischemic CVA within 8 hours of onset?

Yes ☐ Discuss with on-call vascular neurologist through TACC (radio or phone x5678) for possible treatment options.
No ☐ Antplatelet therapy → Arrange appropriate admission.

perform bedside swallowing screening; if passes, give aspirin 325 mg PO, if fails, give aspirin 300 mg PR

Check here if discussed with vascular neurologist anyway.

Resident/PA/CRNP
Print Last Name: ___________________________
Date: ____________
Sign: ___________________________
Time: ____________

ED Attending physician (required):
Print Last Name: ___________________________
Date: ____________
Sign: ___________________________
Time: ____________

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### Intracranial Bleed

**Dysfunctional platelets?**
- uremia
- platelet function disorder
- aspirin/clopidogrel (PLAVIX), ticlopidine (TICLID), aspirin/dipyridamole (AGGRENOX)

Yes [ ] Order DDAVP →

No [ ]

**Does patient need platelets?**
- Platelet count < 100,000: 2 units
- Aspirin response test < 550: 6 units
- Coumadin & aspirin: 10 units

Yes [ ] Order platelets →

No [ ]

**Does patient need Coumadin reversed?**
- Elevated bedside PT/INR

Yes [ ] Reverse Coumadin →

No [ ]

**Is patient a neurosurgical candidate?**
- Discuss with neurosurgery if needed
- 0800 - 1600 M-F: Notify Neurosurgical PAs
- Weekends/nights call neurosurgery answering service

Yes [ ] Prepare for OR →

No [ ] Arrange for admission

**DDAVP**
- usual dose 0.3 mcg/kg; 21 mcg for 70 kg adult

**Transfuse platelets**
- 2 units
- 6 units
- 10 units

**Vitamin K 10 mg IV STAT at 1 mg/min infusion**

**Fresh Frozen Plasma**
- Usual adult dose 3-4 units.
- FFP dosage = 10 ml/kg
- Approximately 200 mL/unit.
- Order in units rather than mL

**Obtain FFP STAT**

**Start infusion STAT**

**Triple lumen central line kit with extra drapes and ultrasound cover to bedside**

**Type and cross 4 units pRBC**

**Page anesthesia STAT to see patient in ED**