# Spontaneous intracranial hemorrhage

## Background

- The most common cause is uncontrolled hypertension.
- Most hemorrhage expansion occurs in the first 6 hours and is associated with worse outcome. Hemorrhagic expansion can be prevented by controlling blood pressure
- CTA head should be considered to identify patients at risk of hematoma expansion and to evaluate for underlying vascular malformations, particularly if lobar or involving brainstem or cerebellum; post contrast CT scan may identify a slowly expanding hemorrhage or underlying brain tumor.
- If patient is deteriorating, **do NOT** keep HOB flat for advanced imaging.

## Determine severity with ICH Score:

Intracerebral Haemorrhage

ICH Score (Hemphill et al.)

| Feature | Finding | Points |
|---|---|---|
| GCS | 3-4 | 2 |
| | 5-12 | 1 |
| | 13-15 | 0 |
| Age | >=80 | 1 |
| | <80 | 0 |
| Location | Infratentorial | 1 |
| | Supratentorial | 0 |
| ICH volume | >=30cc | 1 |
| | <30cc | 0 |
| Intraventricular Blood | Yes | 1 |
| | No | 0 |
| ICH SCORE | | 0-6 points |

| ICH Score | 30 Day Mortality |
|---|---|
| 0 | 0% |
| 1 | 13% |
| 2 | 26% |
| 3 | 72% |
| 4 | 97% |
| 5 | 100% |
| 6 | 100% |

## Recommendations:

- Please defer to anticoagulant-associated Intracranial Hemorrhage for patients taking an anticoagulant.
    - Outside of patients with ICH going to surgery, there is no defined role for platelet transfusion in patients taking antiplatelet prior to ICH
- For most patients, reduce SBP to 130-140mmHg, to reduce hemorrhagic expansion and mortality; if transferred, ensure BP has reached target before sending
    - AHA Guidelines do not specify the antihypertensive to use, but IV nicardipine is the most frequently used medication in modern clinical trials; other options include labetalol (if not bradycardic), clevidipine, hydralazine (if bradycardic), enalapril
- HOB elevated to 30 degrees; do not leave HOB flat for prolonged imaging or during transfer
- Prophylactic antiseizure medication is not recommended
- Treatment of glucose <60mg/dL is recommended; if >180mg/dL, it is reasonable.
- Cardiac monitoring for at least 24hrs
- Frequent neurocheck and vital signs
    - 0-6 hours from symptom detection – every 30 minutes
    - 6-24 hours from symptom detection – every 1 hour
    - >24 hours and blood pressure not at goal or worsening exam – every 1 hour
    - >24 hours and blood pressure at goal – every 4 hours, in neurologically stable patient
- Consult with neurology and/or neurosurgery for determination of neurosurgical intervention
- Repeat head CT without contrast, if neurological deterioration occurs