

Pediatric Patient with Traumatic Brain Injury (TBI)



Patients with > one area of a bleed of any type should be automatically classified as kBig 3

Are ANY of the following present?

Radiographic Findings

- IVH
- EDH $\geq 8\text{mm}$
- SDH $\geq 8\text{mm}$
- IPH $\geq 8\text{mm}$ or multiple
- SAH > 3 sulci AND bi-hemispheric
- Displaced skull fracture > 1 cranium width

Clinical Findings

- GCS ≤ 12
- Anticoagulation or antiplatelet
- Non-accidental trauma (NAT) mechanism

YES

kBIG 3 High Risk

Transfer / Admit to pediatric trauma center with neurosurgery consultation available

Are ANY of the following present?

Radiographic Findings

- EDH $< 8\text{mm}$
- SDH $4.1 - 7.9\text{mm}$
- IPH $4.1 - 7.9\text{mm}$
- SAH > 3 sulci, single hemisphere
- Non-displaced skull fracture or mildly displaced < 1 cranium width

Clinical Findings

- GCS 13-14
- Persistent nausea, vomiting, intractable headache
- Intoxication

YES

kBIG 2 Medium Risk

Transfer / Admit to pediatric trauma center with neurosurgery consultation available

- NO neurosurgical consultation
- NO repeat head CT
- GCS 15 at discharge
- Follow up concussion clinic

If worsening: neuro exam

Confirm Intracranial Hemorrhage Size

Radiographic Findings

- SDH $\leq 4\text{mm}$
- IPH $\leq 4\text{mm}$
- SAH ≤ 3 sulci (total)
- Non-displaced skull fracture or mildly displaced < 1 cranium width

Clinical Findings

- GCS 15

YES

kBIG 1 Low Risk

- Discharge from Emergency Department
- NO repeat head CT
- NO neurosurgical consultation
- Follow up concussion clinic

If worsening: neuro exam

Isolated Skull Fracture

Radiographic Findings

- No ICH
- Non-displaced skull fracture or mildly displaced < 1 cranium width

Clinical Findings

- GCS 15

YES

kBIG 0 Low risk isolated skull fracture

- Discharge from Emergency Department
- NO repeat head CT
- NO neurosurgical consultation
- Follow up concussion clinic

If worsening: neuro exam

Low risk isolated skull fracture and concern for child physical abuse: please call safe and healthy families. Otherwise treat as kBIG 0.
(801) 442-SAFE (7233)

If history of traumatic mechanism is unclear, injury pattern is outside of what is listed or if concerned for aneurysmal bleed: then patient is off protocol and physician should consult Pediatric Telehealth, available 24/7.

Abbreviations

IVH: Intraventricular Hemorrhage SDH: Subdural Hematoma SAH: Subarachnoid Hemorrhage
EDH: Epidural Hematoma IPH: Intraparenchymal Hemorrhage ICH: Intracranial Hemorrhage



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