

Determining Patient Admission Need to the Intensive Care Unit After Isolated Minimally Traumatic Brain Injury.

Fernando Enrique Alonso MD; J Adair Prall

Introduction

There are 1.5 million traumatic brain injuries (TBI) annually in the United States. Of those, over 75 percent are mild TBI (mTBI) with a GCS score of 13-15 (CDC). TBI leads to 1.1-1.5 million emergency department visits and 235,000 hospitalizations. Patients with mTBI and with a head CT that is negative for traumatic changes are usually discharged from the emergency department after a period of observation. Patients who have post traumatic intracranial hemorrhage (ICH), most commonly in the form of a subdural hematoma (SDH), either convexity (cSDH) or smear (sSDH), epidural hematomas (EDH), parenchymal hemorrhage (IPH) or traumatic subarachnoid hemorrhage (tSAH) and do not require immediate intervention are frequently observed in the Intensive care unit (ICU) where they are monitored with repeat imaging and observation.

Methods

We performed a literature review with intention to identify the need for neurosurgical intervention on patients with isolated ICH in the form of IPH, sSDH and tSAH. Neurosurgical intervention was defined as the need for placement of an intracranial pressure (ICP) monitor, decompressive craniectomy or evacuation of a hematoma.

Results

Our systematic review yielded 11 manuscripts which examined the need for neurosurgical intervention in mTBI patients with tSAH, minimal or small IPH, smear, falcine or tentorial SDH. Among all 11 studies, we identified 1857 patients with tSAH and mTBI. None underwent neurosurgical intervention in the form of operative intervention or placement of an ICP monitor. 87 patients with smear, falcine and tentorial SDH and mTBI were identified and none underwent neurosurgical intervention.

Conclusions

We have systematically reviewed the literature for studies on patients who had mTBI with intracranial injury including focal traumatic SAH, smear, falcine or tentorial subdural hematomas, and small intraparenchymal contusions. Patients with this combination of minor clinical and radiologic injury almost never require neurosurgical intervention.

Learning Objectives

Patients with mTBI in the form of tentorial SDH, falcine SDH and tSAH are unlikely to require ICU admission.

[Default Poster]