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Background

- Traumatic brain injury (TBI) associated with facial fractures: major public health concern worldwide
- Mild TBI reported in up to **29.7%** of mandibular fractures^{1,2}
- Risk factors of TBI in patients with mandibular fractures remain unknown

Methods

- Retrospective review:
 - 2018-2019
 - **Adult** patients
 - R Adams Cowley Shock Trauma Center with **mandibular fracture**
- **Primary outcome: concomitant TBI** on presentation:
 - Positive head CT=hemorrhage, parenchymal contusion, diffuse axonal injury, or
 - Negative CT with GCS<15 or any neurologic symptom/sign*
- **Secondary outcome: persistent/incident neurologic symptoms >4 weeks** after injury

Results

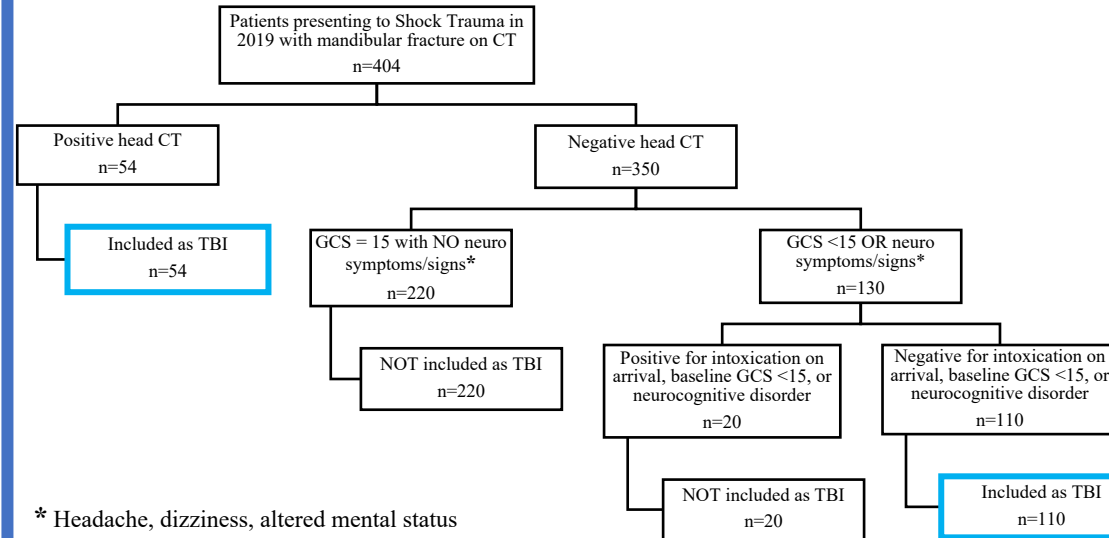


Figure 1. Flow diagram for the selection of our patient population.

- **404** patients included: **164 (40.6%)** had **concomitant TBI** on presentation
 - **Older age:** 1 year increase → **1.02 X** increase in odds of TBI on presentation
 - **Parasymphyseal fracture** → **1.8 X** increase in odds of TBI on presentation
- **236** patients with follow up ≥ 4 weeks after injury:
 - Median follow up of **71 days** (IQR: 44-197)
 - **105 (45.0%)** with **neurologic sequelae**
- **Positive head CT** on presentation → **9 X** increase in odds of **persistent neurologic sequelae** at ≥ 4 weeks after injury

Conclusions

- Patients who:
 - Are **older**
 - Have **parasymphyseal** mandibular fractures
 - Have **abnormal head CT** on presentation
- may benefit from:
 - **TBI screening**
 - **Close and prolonged follow up** for the persistence of neurologic sequelae

References

1. Grant AL, Ranger A, Young GB, Yazdani A. Incidence of major and minor brain injuries in facial fractures. *J Craniofac Surg.* 2012;23(5):1324-1328. doi:10.1097/SCS.0b013e31825e60ae
2. McCarty JC, Kiwanuka E, Gadkaree S, Siu JM, Caterson EJ. Traumatic Brain Injury in Trauma Patients With Isolated Facial Fractures. *J Craniofac Surg.* 2020;31(5):1182-1185. doi:10.1097/SCS.0000000000006379