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The Need for Neurosurgical Intervention in Trauma Patients with a Positive CT Scan and Glasgow Coma Scale of 13-15

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Background

- Lehigh Valley Cedar Crest (LVH-CC), a PTSF Level 1 Trauma Center, admits over 4,000 Trauma patients a year.
- Many of these patients have a minor brain injury as defined as a Glasgow Coma Scale anywhere from 13-15.
- These patients, with a positive CT head scan, are often admitted or transferred to LVH-CC for neurosurgical evaluation.

Objectives

- While neurosurgical consultation is very common in these patients, the majority of these patients do not need a neurosurgical intervention.
- The purpose of this study is to determine what factors are associated with the need for a neurosurgical intervention in trauma patients with a GCS of 13-15 and a positive CT head scan.

Methods

- The trauma registry and epic hyperspace were used to populate REDcap and excel databases that were created prior to the study.
- Patient data was obtained from online records such as type of brain injury, neurosurgical consult, use of anticoagulants, midline shift, etc.
- The information collected through REDcap will be moved to an excel document where it can be further analyzed.

Results

- Out of the 199 reviewed patients, about 80% of them had a Subarachnoid/Subdural (Hematoma/Hemorrhage) bleed.
- About 96% of patients had a neurosurgical consult and of these patients only about 11% required a neurosurgical intervention.
- Most patients who needed a neurosurgical intervention received a Craniectomy/Craniotomy.
- The majority of SAH and SDH bleeds remain the same or even improve at follow-up scanning.

Conclusion

- Out of the patients reviewed from the database, the majority received a neurosurgical consult but did not need a neurological intervention.
- The common mechanism of injury seen in the patients was some type of fall.
- Most common bleed were SDH and SAH.
- The majority of bleeds in these patients improved or were unchanged on follow-up scanning.
- Future analysis will include factors associated with the need for a neurosurgical intervention in these patients with a GCS 13-15.
- Therefore, we may be able to define a subset of these patients that do NOT need a neurosurgical consultation and admission or transfer to a Level 1 trauma center.

References

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