An international comparison of intraoperative systolic blood pressure in traumatic brain injured patients

Introduction
The World Health Organization predicts that traumatic brain injury (TBI) will be one of the leading causes of mortality and disability worldwide by the year 2020. Literature now supports a higher level of systolic blood pressure (SBP) that may vary by age. Different SBP targets for different age groups are advised in the most recent Brain Trauma Foundation Guidelines for the Management of Severe Traumatic Brain Injury.

The aim is to audit intraoperative SBP in traumatic brain injured patients and examine adherence to updated guidelines at a major trauma center in the United Kingdom, the University Hospital Birmingham, Queen Elizabeth (UHB QE) in 2018. This data will then be compared to 2017 audit results from the Royal Brisbane and Women’s Hospital (RBWH).

Methods
A retrospective search of emergency neurosurgical procedures for patients with severe TBI was completed for 2018, (31 patients). Demographics collected included length of procedure time (minutes) and length of time the SBP was at guideline target. Data was entered for the three age groups: SBP>110mmHg for 15-49yo; >90mmHg for ages 50-69yo; and a SBP>100mmHg for ages 50-69yo.

Results
The most common age group to have a severe TBI requiring neurosurgical procedure was 15-49yo (61%). The age group who had the highest adherence to the guidelines with mean SBP meeting targets 77.5% of anaesthetic time was >70 years. The comparison between the RBWH and the UHB QE hospitals is similar adherence to SBP targets in TBI.

Conclusions
This is a retrospective audit of intraoperative SBP in patients with TBI undergoing neurosurgical procedures at the UHB QE in 2018 and RBWH in 2017. It suggests that adherence to specific age group SBP targets as per the guidelines, can be improved and that adherence rates were similar in both hospitals.

References

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