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A survey of adult patients requiring neurosurgery at a central hospital

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“A survey of adult patients requiring neurosurgery at a central hospital.”

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Abstract

Background

Data pertaining to all subsets of neurosurgical patients admitted to South African hospitals is lacking. The aim of this study was to survey adult patients requiring neurosurgery at Charlotte Maxeke Johannesburg Academic Hospital (CMJAH).

Methods

A retrospective survey of the REDCap neuroanaesthesia database was conducted. Consecutive data were extracted for 2016 and 2017. Data described the pre-operative assessment, intra-operative anaesthetic management and post-operative status of patients undergoing elective and emergency neurosurgical procedures.

Results

The database entries of 873 patients were included in the study. Most of the patients, 622 (72.1%) were male, 558 (63.9%) received emergency surgery, and 337 (38.6%) patients had traumatic brain injury (TBI). The severe TBI incidence was 45.1%. The predominant anaesthetic technique was an intravenous propofol induction 629 (72.1%) and sevoflurane maintenance 539 (61.7%). Marked haemodynamic instability occurred in 208 (23.8%) patients, mandating either vasopressor 99 (47.6%) or inotropic 109 (52.4%) support. Seizure prophylaxis was only given to 39 (4.5%) patients. Steroids were administered to 134 (39.8%) TBI patients. Significantly more elective surgery patients, 224 (71.1%) were extubated immediately post-operatively ($p<0.0001$). However, the in-hospital mortality among patients did not differ significantly between those who had elective 30 (9.5%) or emergency surgery 47 (8.4%, $p=0.6697$). In-hospital mortality was higher for patients having cranial surgery 61 (9.0%) compared to spinal surgery 6 (6.4%), but this difference was not statistically significant ($p=0.3926$).

Conclusion

The frequent administration of steroids to TBI patients at CMJAH is concerning but highlights the importance of utilising databases for quality improvement purposes. The unexpected mortality finding in this study between elective and emergency cases may be explained by the higher ASA classification of elective patients. This study contributes to the understanding of neurosurgical patient peri-operative care.