



True 'Ecological' Studies and Integrated Management of Pediatric Traumatic Brain Injury

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Editorial

The rapid industrial and economic growth worldwide especially in developed countries led to an enormous increase in the rapid transport system along with availability of motor vehicles plying on road caused manifold rise in the number of head injury cases and also associated magnitude of injury severity. Management of severe head injury possesses a challenge, although various guidelines and protocol are available. However, implementation of guidelines has many limitation and as such cannot be generalized and needs tailor-made modifications as the resource scarce countries lack seven basic facility besides, uneven distribution of super specialist hospital services, pre-hospital care facility including transport facility, trained manned power, rapid communication and response system, availability life support equipment, ventilators, patient monitoring units, diagnostic and imaging facility in the intensive care units and specialised facility for intracranial pressure monitoring facility. In the short, health care delivery needs modification and detailed understanding of the austere local hospital environment and local prevalent Neurotrauma practice is important consideration [1-4].

In 2012, Chesnut et al. published a report in New England Journal of Medicine, generated marked international controversy regarding role of intracranial pressure monitoring during the treatment of severe head injury management. Authors conducted studies at centres of Ecuador, Argentina and Bolivia, protocol based intracranial pressure monitoring group was compared against imaging-clinical group and treatment was provided based on intracranial pressure monitoring findings and clinical and imaging observations respectively and authors failed to observe any significant difference in primary treatment outcome, mean intensive unit stay period, occurrence of serious adverse events and incidence of mortality at six-month 39% and 41% respectively. Authors finally concluded treatment of severe traumatic head injury cases, focused monitored intracranial pressure and maintaining at less or 20 mm Hg was not superior to imaging and clinical examination group and refuted importance role of intracranial pressure regulation in the severe head injury management [5].

As several published report proved beneficial role of intracranial pressure monitoring in the treatment of severe head injury cases, was the basis of formulation of intracranial pressure bases treatment protocol of severe head injury management. However, Chestnut et al observation was contrary, despite being a level I evidence, raised a controversy about intracranial pressure monitoring. As study was carried out at centers, lacking were modern advanced medical facilities, training of staff members, educational status and training of medical staff of may play a crucial role in collection and evaluation of intracranial pressure data and proper interpretation of data needs

consideration of these local complex factors and may be cause of ambiguous, constituting a bias of intracranial pressure monitoring data in the final result, being well known that lack of diverse elements of high complexity. Advanced training of staff must be available for each hospitals across the globe to provide equitable care to patients with traumatic brain injury otherwise it may be cause of difference in the results among developed and resource sassed centers [5-7].

In the current age of globalization, need of hour is uniformity of medical practices and protocols, as well as adherence to international guidelines, is mandatory for treatment as well research in future. A valuable aspect of the Chesnut et al study shows that every part of world requires a global approach and presence of even slight disparities in healthcare affect the results even following same protocol based treatment [6-8].

So, it is appropriate time to simulate expansion by international bank data and also promoting international research partnerships for treatment of traumatic brain injury. Such initiative should be led by research groups in neurotrauma globally, trying to understand and integrate data analysis in a better way, trying to eliminate the creeping of bias as a result of misinterpretation affected by the dynamics of local health care systems with limited resources and training of man power, lack specialist, subspecialty training is still in the development process.

References

1. North B (1997) Intracranial pressure monitoring. In: Reilly P, Bullock RS (eds.) Head Injury. Chapman & Hall, London, pp. 209-216
2. Tse V (2003) Neurological monitoring and management for intracranial hypertension. *Sem Neurosurg* 14: 89-98.
3. Povlishock J, Bullock MR, Hillered LT (2007). Guidelines for management of severe head injury. *J Neurotrauma* 24: 1-117.
4. Juul N, Morris GF, Marshall SB, Marshall LF (2000) Intracranial hypertension and cerebral perfusion pressure: influence on neurological deterioration and outcome in severe head injury. The Executive Committee of the International Selfotel Trial. *J Neurosurg* 92: 1-6.
5. Chesnut RM, Temkin N, Carney N, Dikmen S, Rondina C, et al. (2012) Global Neurotrauma Research Group. A trial of intracranial-pressure monitoring in traumatic brain injury. *N Engl J Med* 367: 2471-2481
6. Maas AI, Hukkelhoven CW, Marshall LF, Steyerberg EW (2005) Prediction of outcome in traumatic brain injury with computed tomographic characteristics: a comparison between the computed tomographic classification and combinations of computed tomographic predictors. *Neurosurgery* 57: 1173-1182
7. Marmarou A, Anderson RL, Ward JD, Sung C, Choi, et al. (1991) NINDS Traumatic Coma Data Bank: intracranial pressure monitoring methodology. *J Neurosurg* 75: 21-28.
8. Bullock MR, Chesnut RM, Clifton GL (2000) Guidelines for management of severe head injury. Brain Trauma Foundation.