

# Trauma Systems and Services in India

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It is well known that outcome in traumatic brain injuries (TBIs) overwhelmingly relies on the initial resuscitation and management of these patients. Hypoxia and hypotension in patients with severe TBI portends a worse prognosis and aggressive prevention and treatment can improve overall survival and prognosis. Neurosurgeons are well aware that the prehospital and emergency room care remains the weakest link in the TBI management chain. It is with these thoughts that this issue of *Indian Journal of Neurotrauma* (IJNT) is being taken out with emphasis on the trauma systems and services in India.

The lead article on training general surgeons in neurotrauma care is a controversial topic and therefore we have invited commentaries for and against this subject from leading neurosurgeons across the country. Nevertheless, the training program is already in place in AIIMS and other hospitals and only time will tell whether this step will be beneficial to neurotrauma care in our country.

It is also for the first time that the functioning of neurosurgery departments across the newly established AIIMS across the country are available in one issue of IJNT. We have invited articles from newly functioning AIIMS Rishikesh, AIIMS Bhubaneswar, AIIMS Raipur, SGPGI Trauma Centre, Lucknow, as well from established departments such as PGIMER Chandigarh and Jabalpur Medical College.

It is extremely important that regular audits are done across neurotrauma departments, especially in the newly created trauma centers as well as AIIMS across the country. I have had the privilege of setting up the neurosurgery department at JPNA Trauma Centre (JPNATC), AIIMS, New Delhi, which today is the undisputed leader in neurotrauma care in India and has set the benchmarks for others to emulate. The Centre started trauma services on 26th November, 2007 and audited its initial experience in managing TBI over the next one year.<sup>1</sup> In this period, a total of 2,068 patients of head injury were treated of which 53% had severe TBI, 18% had moderate TBI, and 29% had minor head injuries (Glasgow Coma Scale [GCS] score  $\geq 14$ ). The mean hospital stay was 14 days (range 1–62 days) with in-hospital mortality being 2% in minor TBI, 12% in moderate TBI, and 36% in severe TBI patients. Mortality was higher (38%) in children ( $\leq 12$  years). In a more rigorous follow-up audit done subsequently from 2010 to 2012,<sup>2</sup> there

were 1,527 patients with moderate or severe TBI patients with the vast majority (1281 [83.89%]) having severe TBI. This skew reflects a problem present across all developing countries. Due to paucity of admission beds, only severe TBI patients get admitted with the rest of the patients being denied admission in public-funded trauma centers like JPNATC. Another important finding of this study was that neurosurgical intervention was done in almost half of all patients admitted (49.12%) and again reflects the low threshold for surgery in a mature neurosurgical setup. The key findings of the study was the insignificant decrease in in-hospital mortality to 34.58% with a 67.21% ( $n = 701$ ) unfavorable outcome (Glasgow Outcome Score [GOS] 3 or less) at 6 months. Both these studies show that despite improving emergency and trauma care, outcome in patients with severe TBI plateaus over time, with more significant improvement only possible by perhaps improving prehospital and rehabilitative care.

Disparate data from different centers in this issue also point to the urgent need of a nationwide neurotrauma registry and the paper titled 'Improving Quality of Emergency Care in India by Implementing Trauma Registries' in this issue is an important step in this direction.

Finally, the saying 'prevention is better than cure' is undoubtedly most appropriate in neurotrauma and the article titled 'Opportunities and Challenges for Implementing Neurotrauma Prevention Program: A Practical Perspective for Developing Countries' makes for insightful reading for every neurosurgeon.

## Conflicts of Interest

None declared

## References

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