Intensive care management of severe traumatic brain injury in India

Traumatic brain injury (TBI) is a major public health problem in India. Lack of reliable and good quality national or regional data has thwarted its recognition. Considering this lacuna in the publication of experience with TBI, an article published in the current issue of *Journal of Neuroscience in Rural Practice* by Kamal *et al.* provides a good overview of the causative factors, injury profile, management details, and outcome of moderate and severe TBI after getting treated in Intensive Care Unit (ICU) of a level one trauma center in the capital of India.^[1] The authors report a large experience of severe and moderate TBI managed in ICU. Authors have evaluated a number of parameters in 1527 patients admitted in ICU of the trauma center over 26 months duration. However, the rationale for combining severe and moderate TBI is not explained. The prognosis of severe TBI is considerably different from moderate TBI.^[2] The study could have been restricted to severe TBI as the number of moderate TBI cases were few in their study. However, authors should be congratulated for a detailed analysis of patient-related parameters such as demographics, physiological parameters, and radiological findings at admission and follow-up at 6 months. The authors also had a large number of patients (more than one-third patients with severe TBI) who underwent intracranial pressure monitoring, which is not routinely practiced in India even at large volume neurotrauma centers. The authors reported in-hospital mortality of 38.56% and a 6-month mortality of 64% among severe TBI. These figures are significantly higher than that reported for severe TBI from elsewhere, particularly the mortality at follow-up. This result should be taken with caution as the number of patients available for follow-up were only 70%. In a similar study by Tripathi *et al.*, the mortality at follow-up after 3 months was 32%.^[3] They had a follow-up rate of 88%. However, they recruited all the consecutive patients whether they were admitted to ICU or not is not mentioned. A smaller but prospective study with good follow-up could give more information than a retrospective study with a large number of patients with poor follow-up. In recently published two prospective studies of critical care

management of severe TBI from India, the follow-up rates were 99% and 89%, respectively. The 6 months mortality reported in these studies were 33.5% and 30.4%, respectively.^[4,5] Lack of follow-up is a serious concern in most of the Indian studies. Deepika *et al.* showed that the predictive validity of disability rating scale (DRS) at the time of discharge from acute care was good in determining functional outcome at 6 months. They proposed that DRS at discharge can be used as surrogate outcome assessment tool for the functional outcome when follow-up is not available.^[5] The other reason for high mortality in Kamal's study was more number (25%) of patients with hypotension, and more numbers (28%) with extracranial injuries. The study by Deepika *et al.* had patients with only isolated severe TBI, by Gupta *et al.*, had fewer extracranial injuries, and Tripathi *et al.* did not mention about extracranial injuries.^[3-5]

At best, the study by Kamal *et al.* provides a database of severe TBI managed in ICU, which can be used for comparison with other centers in India. It still does not provide reliable data on the outcome of severe TBI except for in-hospital mortality.

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