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Is ICP monitoring useful for all patients with moderate and severe head injury? an institutional experience in a tier 2 city**Dr Sai Kiran**

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Introduction: Prevention of secondary injury to brain by regulating the cerebral perfusion pressure (CPP) is the single most important target in management of traumatic brain injury patients. Maintaining the Intracranial pressure (ICP) at optimal levels is paramount in achieving that target. With the advent of recent imaging and monitoring modalities, more reliable, precise and rapid ICP measurement is made possible. Various techniques were proposed to monitor ICP like optic nerve sheath diameter ONSD (optic nerve sheath diameter) measurement, intraparenchymal and ventricular ICP measurement, etc. We like to share our experience in managing traumatic brain injury patients with the help of intraparenchymal ICP monitoring, mainly comparing the ICP, cisternal effacement in initial CT (Computed Tomography) brain and ONSD

Materials & Methodology: Thirty-nine patients of traumatic brain injury were managed with intraparenchymal ICP monitoring in the past 18 months in our institute. An initial CT brain was taken at the time of admission and cistern effacement score (CES) and ONSD were noted. Continuous ICP monitoring was done in all these patients and three groups were divided, Group1 – patients who never had even a single reading of ICP more than 20 mmHg, Group2 – those who had occasional spikes of ICP more than 20 mmHg for not more than 15 mins and immediately controlled with antiedema measures and Group3 – those whose ICP is persistently high and needed decompressive craniectomy.

Results: Out of the 39 patients, 95 % (37) were males and 5 % (2) were females. 79 % (31) were admitted with severe head injury and 21 % (8) with moderate head injury. 11 patients came under Group 1, 23 under Group 2 and 5 under Group 3. Mean CES in Group1 was 3.81, Group2 was 7.08 and Group3 was 10.2 with significant ($P=0.000002$) difference. Twenty-one had $CES>6$ out of which 23.8% (5) needed decompression but out of 18 whose CES was 6 or less never needed decompression.

Conclusions: CES in the initial CT brain may be a reliable factor for predicting the ICP and the need for decompressive surgery. In economically restrained countries like India the invasive and expensive ICP monitoring may be of more useful in traumatic brain injury patients with $CES>6$.

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