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ISNACC-S-01

Predictive validity of disability rating scale in determining functional outcome in patients with severe traumatic brain injury

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Background: Most patients with severe traumatic brain injury (TBI) are discharged when they are still not physically fit. An assessment of disability in inpatient settings with a simple and robust measure usable by non-specialist ward staff is useful in addressing the outcome of such patients. The disability rating scale (DRS) was developed to assess change during rehabilitation and is considered most versatile outcome assessment tool for patients with TBI. This study assesses the validity of the DRS at discharge from acute setting for predicting functional outcome later. **Methods:** Patients with severe TBI, who underwent standard treatment in a neurosurgical Intensive Care Unit, were prospectively followed up. The condition at discharge from hospital was assessed using DRS. The patients were called after 6 months after injury, and the outcome was assessed using DRS and Glasgow outcome scale extended (GOSE). The predictive validity of DRS at discharge and GOSE 6 months after injury was measured using the Spearman rank correlation coefficient. **Results:** A total of 88 patients with severe TBI were evaluated at the time of discharge. The follow-up data were available for 79 patients. All the patients were moderately disabled or worse (DRS 11–29) at the time of discharge. In terms of predictive validity, DRS at discharge was highly associated with the GOSE after 6 months (Spearman rho -0.746 , two-tailed at $P = 0.01$). **Conclusion:** DRS at discharge is an appropriate tool to extrapolate functional outcome in patients with severe TBI.

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Comparison of conventional technique with 'NO TOUCH' technique for extubation to assess the quality of emergence in patients undergoing transsphenoidal pituitary surgery

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Background: Predictable and smooth emergence is a major concern in neurosurgical patients. Pituitary surgery is no different as it also mandates a smooth and rapid emergence from anaesthesia. The association of nasal packing, difficult airway and trickling of blood in oropharynx makes extubation even more challenging. We hypothesise that switching off all anaesthetic agents following surgery and ventilating the patients undisturbed till the eye-opening or response to verbal commands with subsequent reversal of neuromuscular blockade and extubation is superior to conventional extubation technique. **Methods:** Two emergence techniques (conventional vs. 'NO TOUCH') were evaluated in 44 American Society of Anesthesiologists I–II patients undergoing TSS. In conventional method, after switching off all the anaesthetic agents, manual ventilation was done, neuromuscular blockade was reversed once tetralogy of fallot (TOF) ≥ 3 and trachea extubated. In 'NO TOUCH' method, ventilation was undisturbed till the patient responded, reversal was given when TOF ≥ 3 and extubated on fulfilment of extubation criteria. A 20-point scoring system was used to evaluate the quality of emergence. $SjvO_2$ was used to study the cerebral blood flow changes during emergence and extubation. **Results:** Quality of emergence score was significantly better in 'NO TOUCH' group (18.05 ± 1.17) as compared to the conventional group (13.45 ± 1.65 , $P = 0.001$) with no difference in time to emergence (9.77 ± 3.05 vs. 9.18 ± 2.08 , $P = 0.30$) and time to extubation (11.68 ± 3.68 vs. 10.64 ± 2.95 , $P = 0.46$) in the two groups. $SjvO_2$ values revealed hyperaemia ($SjvO_2 > 75\%$) during emergence in both the groups but was significantly less in the 'NO TOUCH' technique. **Conclusions:** The quality of emergence as a composite score of 20 points is significantly better with 'NO TOUCH' method as compared to the conventional method of extubation. There is significantly less hyperaemia during extubation with the 'NO TOUCH' technique.

Table 1: Quality of emergence scale (minimum - 5, maximum - 20)

Emergence parameter	MAP (rise from baseline) (%)	Cough	Agitation	Consciousness
4	<10	No cough	Calm	Responds to name spoken in normal tone
3	10–20	Single episode	Restless	Responds to name spoken in loud tone
2	20–40	1 episode, <5 s	Agitated	Responds to shaking
1	>40	1 episode, <5 s	Very agitated	Does not responds

MAP: Mean arterial pressure

Table 2: Results

Demographics	Group I	Group I	P
Age	36.64±12.35	40.27±12.42	0.34
Gender (male:female)	10:12	16:6	0.12
Weight	68.59±13.75	68.70±11.81	0.978
ASA I:II	10:12	9:13	1.00
Intra-operative data			
Propofol (in mg)	98.64±28.99	97.73±23.49	0.91
Fentanyl (in µg)	221.14±50.28	220.45±45.92	0.96
Fluid (in ml)			
Duration of surgery (in min)	75.00±22.78	68.18±21.24	0.31
Duration of anaesthesia (in min)	125.68±28.71	118.18±26.30	0.37
Emergence			
Time to emergence (min)	9.77±3.05	9.18±2.08	0.46
Time to extubation (min)	11.68±3.68	10.64±2.95	0.30
Emergence score	13.45±1.654	18.05±1.17	0.00
SjvO ₂ (%)	85.53±7.42	76.30±8.77	0.001

ASA: American Society of Anesthesiologists, SjvO₂: Jugular venous oxygen saturation

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Electrophysiologic identification of Broca's area during frontal lobe tumour surgeries

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Introduction: Intraoperative mapping of language function assumes importance in patients undergoing resection of tumours in proximity to Broca's area. Optimal stimulation protocol for effecting a speech arrest is challenging because of the risk of seizure due to high frequency, long duration electrical stimulation in awake subjects. We report a case series to present our experience with an improvised protocol for direct cortical electrical stimulation for language mapping. **Methods:** A total of three cases of language mapping have been

carried out since the inception (i.e., about 1 month) of neurophysiological monitoring services in our institute. All the patients (two female and one male) had tumours close to the anatomical Broca's area as determined by pre-operative magnetic resonance imaging (MRI). In one patient, a functional MRI confirmed the same. All were right-handed. Baseline assessment of language function revealed deficits in all the patients. Awake craniotomy was carried out under neuronavigation guidance. Verbal fluency and object recognition tasks were carried out. Stimulation protocol consisted of 1000 ms duration electrical pulse of biphasic polarity presented at 60 Hz for 7 s, repeated intermittently. **Results:** All patients had language area in the left cerebral hemisphere. Using this stimulation protocol, a current, as small as 5 mA, caused speech arrest and defined the expressive language area. No patient developed intraoperative seizure or did anyone develop new language deficit post-surgery. **Conclusion:** Our limited experience suggests that our language mapping stimulation protocol has been effective in causing speech arrest without inducing