

communicating artery. CT aortogram reported preductal COA. Clipping of aneurysm was performed successfully. **Conclusion:** Early diagnosis and repair of COA prevents cerebrovascular complications; although aneurysm can occur even after COA repair. Recent advances in anaesthesia and neurosurgical techniques allow surgery of ruptured cerebral aneurysm in presence of untreated coarctation with relative safety.

#### ISNACC-S-16

### Effect of transcutaneous electrical nerve stimulation on intraoperative fentanyl and propofol consumption in patients undergoing lumbar discectomy

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**Introduction:** Transcutaneous electrical nerve stimulation (TENS) is a non-invasive electrotherapy technique used to treat acute and chronic pain with a special device that delivers electrical impulses to the skin. Numerous studies have been published for the use of TENS in acute postoperative pain with varying duration of pain relief after TENS, but, it is not clear if TENS is applied preoperatively, how long its effect lasts. This randomised, placebo controlled trial was carried out with the objectives of finding out effect of TENS on intraoperative fentanyl and propofol consumption and postoperative analgesic requirement in patients undergoing lumbar discectomy. **Methods:** Sixty patients were randomised to two groups i.e. TENS group (Group T) and Sham TENS group (Group S). A conventional TENS current in the form of biphasic square pulse was used at a frequency of 100 Hz and pulse width of 250 micro seconds. The intensity of electrical stimulation was at 20 milli Ampere (mA) for the T group and 0 mA for the S group by the blinded anaesthesiologist. Standard protocols were followed for induction and maintenance of anaesthesia. Heart rate, blood pressure, and BIS were noted regularly after induction. Primary outcome was to compare of the effect of TENS on intraoperative fentanyl requirement and secondary outcomes were its effects on intraoperative propofol consumption and postoperative analgesic requirement. **Results:** Thirty one patients were studied in group T and 29 patients in group S. Demographic data, duration of surgery, total dose of fentanyl and propofol requirement, blood loss, and the recovery times were comparable between the 2 groups. The mean VAS scores on rest and movement before application of TENS preoperatively were 4.71 and 5.9 in group T which significantly reduced after application of TENS to 3.06 and 3.42 respectively. However in the Sham TENS

group the mean VAS score did not change significantly. The mean fentanyl consumption in group T was  $2.05 \pm 0.47$  mcg/kg (microgram per kilogram body weight) in group T and  $2.20 \pm 0.61$  mcg/kg in group S ( $p = 0.27$ ). The mean propofol consumption was  $120.39 \pm 28.91$  mcg/kg/min (microgram per kilogram body weight per minute) in group T, and  $117.10 \pm 17.91$  mcg/kg/min in group S ( $p = 0.6$ ). **Conclusion:** Application of TENS significantly reduced the pain in term of decrease in VAS score at rest and movement preoperatively, but the same did not translate into any decrease in intraoperative analgesic or anaesthetic requirement, and neither there was any decrease in postoperative analgesic requirement in patients undergoing lumbar discectomy.

#### ISNACC-S-17

### Incidence of hypotension in neuro anaesthesia practice in a tertiary care hospital - A retrospective analysis

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**Introduction:** This retrospective analysis was aimed at estimating the incidence of hypotension in patients undergoing neurosurgery under general anaesthesia and evaluating the causes of hypotension. **Methods:** Data stored in the computerised Anaesthesia Information Management System was analysed. All patients who underwent neurosurgery under general anaesthesia between 01 Jan 2015 to 31 Dec 2016 were included. Demographic, clinical and haemodynamic data was extracted from these records. Hypotension was defined as MAP less than 65 mm Hg. Charts of patients with hypotension were further evaluated for causes and severity. **Results:** A total of 856 patients underwent neurosurgical procedures under general anaesthesia during the study period (451 male/405 female). Hypotension occurred in 248 patients (28.97%). 121 (14.1%) patients had transient post induction hypotension requiring three or less 50 mcg aliquots of phenylephrine. 127 (14.8%) patients had sustained hypotension due to other causes which required an infusion of vasopressors/ inotropic agents to sustain blood pressure. Three patients had severe refractory hypotension which required surgery to be stopped. **Conclusion:** Hypotension occurred in 55.5% of patients undergoing lateral thoracotomy with one lung ventilation and in 52.7% of patients undergoing decompressive craniotomy. 33% patients undergoing surgery in prone position also had significant hypotension as opposed to 13% of patients in all other positions combined.

Table

Table 1: Incidence of hypotension

Type of surgery	Total number of cases	Hypotension, n (%)	Percentage of total hypotension (n/127) (%)
Cervical spine			
Prone	45	14 (31.1)	18/127 (14.2)
Supine	51	4 (7.8)	
Thoracic spine			
Prone	20	7 (35)	12/127 (9.4)
Lateral	09	5 (55.5)	
Lumbar spine	287	11 (3.8)	11/127 (8.7)
Supratentorial			
Supine	101	23 (22.8)	24/127 (18.9)
Sitting	02	1 (50)	
Infra tentorial			
Lateral	18	7 (38.8)	13/127 (10.2)
Prone	17	6 (35.3)	
Aneurysm	15	3 (20)	3/127 (2.4)
Epidural hematoma	21	9 (42.9)	9/127 (7.1)
Decompressive craniotomy	36	19 (52.7)	19/127 (15)
Miscellaneous	234	18 (7.7)	18/127 (14.2)
Total	856	127 (14.8)	

## ISNACC-S-18

## Can superior saggital sinus density predict anemia?

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**Introduction:** Correlation between density of superior saggital sinus (SSS) on CT scan and haemoglobin (Hb) has been described previously. The extent of contribution of leucocytes (TLC) and platelets (PC) to SSS density is not known. With this study we aimed to find the contribution of WBC and Platelets to the SSS density and identify a cut-off value for SSS density to predict anemia. **Methods:** Data was collected retrospectively from the electronic database for all head injured (TBI) patients operated within a 4 month period (n = 71). Maximum and average SSS density in Hounsefeld units (HU) was calculated in two ways-(i) triangular area outlining the SSS (Tmax/mean) and (ii) circular area of 0.03-0.05 cm<sup>2</sup> in SSS (Cmax/mean). Concurrent Hb, TLC and PC were noted. Linear regression was used to find independent predictors of Hb among the significant correlations

Table 2: Causes of hypotension

Cause	Incidence (n)	% (n/127)
Haemorrhage		
Gen/arterial	88	69.3
Venous sinus	4	3.14
Position	1	0.8
Pneumothorax	1	0.8
Venous air embolism/ paradoxical air embolism	0	0
Cardiac		
Preoperative left ventricular dysfunction	1	0.8
Acute coronary event	0	0
Arrhythmias	11	8.7
TakotSubot	0	0
Auotonomic dysfunction	3	2.4
Neurogenic shock/ spinal shock	1	0.8
Drugs		
Pericardial effusion	0	0
Angiotensin converting enzyme/ angiotensin-receptor blocker	2	1.57
Anti-Parkinson	1	0.8
Anaphylaxis	1 (vancomycin)	0.8
Anaesthetic drugs	3 (atracurium), 9 (propofol)	2.4, 7.1
Antiepileptic dugs	0	0
Misc		
Serotonin secreting tumours	1	0.8
Others	0	0

within hematological parameters. ROC curve was used to find a cut-off value for the SSS density to diagnose Hb less than 10 gm/dl. **Results:** Tmax/Tmean/Cmax/Cmean had significant correlations with Hb (p<0.05) with coefficients of 0.335, 0.349, 0.416 and 0.445 respectively. TLC and PC were not associated with any of the CT scan parameters. Linear regression revealed only Cmean to be independently predictive of Hb (P = 0.017). Regression equation derived was [Hb=9.142+0.89\*Cmean]. Area under the ROC curve for Cmean as a predictive test of Hb was 0.791 (P = 0.003) and Cmean of 44.83 HU predicted Hb <10 gm/dl with sensitivity/specificity 80% and 76%