

Incidence and severity of POST was assessed at 1, 6 and 24 hr and graded on four point scale (0-3). Collected data was analysed using SPSS. Fisher's Exact test and Mann Whitney U test was used to compare incidence and severity of POST among groups respectively. $P < 0.05$ was considered statistically significant. **Results:** The overall incidence of POST was 53%, where 54 (77%) in Group A and 21 (30%) patients in Group B experienced POST ($p < 0.0001$). POST was significantly attenuated at 1 hr and 6 hr in Group B ($p < 0.05$). POST occurred in 31 patients of Group A versus 6 patients in Group B at 6 hr. **Conclusion:** Magnesium sulfate nebulization significantly attenuated incidence and severity of POST in patients undergoing surgery in Prone Position.

ISNACC-S-24

Ketoacidosis in the diabetic neurosurgical patient: The steroid conundrum

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Introduction: Perioperative administration of steroids is common in patients with brain tumours. However in Diabetic patients steroids are known to rarely induce diabetic ketoacidosis. **Case Summary:** A 59 year old lady with Type-2 Diabetes Mellitus presented in the evening to the emergency with headache, dizziness, generalised fatigue and vomiting. The patient had mild confusion with GCS 14/15 but neurologically intact. Her serum glucose was 8.3 mmol/l. Emergency head CT revealed left fronto-parietal lesion with peritumoral edema and midline shift. She received stat dose of 12 milligrams dexamethasone and began phenytoin 100 milligrams 8th hourly. Later the patient vomited and dropped GCS to 11/15. She was intubated, sedated and shifted to surgical intensive care and continued on dexamethasone 6 milligram 6th hourly. Urgent craniotomy was done next morning. Intraoperatively her serum glucose was 20.5 mmol/l and ABG showed high anion gap metabolic acidosis. Her serum B-hydroxy butyrate was 2.2 mmol/l. She was managed as a case of diabetic ketoacidosis. **Conclusion:** Preoperative steroid use may possibly trigger diabetic ketoacidosis in the neurosurgical patients. Possible changes in practice for such scenarios would include a judicious approach to steroid usage in such patients and active management of diabetic ketoacidosis in any emergency diabetic patient.

ISNACC-S-25

Role of non invasive ventilation in patients with respiratory failure

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Introduction: Non invasive ventilation (NIV) refers to the delivery of ventilatory support or positive pressure into the lungs, usually through a mask avoiding complications of invasive ventilation. The aim of our study is to compare effectiveness of NIV in patients with acute hypoxemic respiratory failure over invasive ventilation (IV) and study intubation rate in patients receiving NIV, ICU stay and overall mortality, complications of invasive ventilation. **Methods:** A randomized prospective study was conducted after getting permission from ethical committee. 40 Patients eligible for the study were randomly assigned to receive either NIV or Invasive ventilation. Group A (n = 20) were given ventilatory support by NIV (BiPAP mode) by RESMED STELLAR 150 ventilator via facial mask, Group B (n = 20) were given ventilator support by IV (SIMV mode) by Hamilton C1 ventilator via endotracheal tube. GCS, APACHE score, P/F ratio, ventilatory and hemodynamic parameters were assessed on admission and monitored at 1 hour, 6 hour and 24 hours. **Results:** At 24 hr follow up intervals, mean PF ratio values were 302.99 ± 74.87 in Group A and 342.17 ± 34.73 in Group B ($t = 2.123, p = 0.040$). A total of 10 (50%) patients required intubation in Group A. The mean total duration of mechanical ventilation in group A receiving (BiPAP) was 3.90 ± 5.80 days compared to 9.50 ± 7.42 days in group B receiving invasive ventilator. ($t = 2.660, p = 0.011$). **Conclusion:** No superiority was found in either group in terms of hemodynamics and ventilatory parameters and blood gas analysis, however, use of NIV showed a significant reduction in total duration of ventilation, length of ICU stay and complications associated with invasive ventilation. NIV is useful alternative amongst patients requiring ventilator support.

ISNACC-S-26

Mannitol shower-the artefactual air embolism

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Introduction: Intraoperative venous air embolism (VAE) is one of the most dreaded anesthetic emergencies. We report a case of artefactual air embolism visualized by transesophageal echocardiography (TEE) which was in fact a shower caused by mannitol infusion. **Case Summary:** A 35-year-old male presenting for surgical excision of para-sagittal meningioma underwent

standard induction and maintenance of anesthesia with routine monitoring was placed in sitting position, and TEE monitoring was instituted to screen for intraoperative air embolism. Osmotherapy was initiated with 20% mannitol. The mid-esophageal bicaval view interrogation revealed a dense shower of bubbles as observed in VAE. The surgical team was alerted about the possible air embolism, but they responded in negative as there were no exposed venous spaces. The shower continued despite flooding the surgical field with saline. Other evidences of VAE, such as a fall in tidal carbon dioxide (ETCO₂), tachycardia, hypotension, desaturation and an arterial blood gas sample proved to be negative for the same. The shower phenomenon continued and as we verified the intravenous (IV) infusion sets, connectors and the IV bottles to rule out iatrogenic sources of air, we stopped the mannitol infusion, after which there was a simultaneous disappearance of the bubble shower, which again reappeared on restarting the infusion. The diagnosis of 'mannitol shower' was confirmed when no shower was visualized on the TEE when mannitol infusion was restarted after replacing the regular IV set with the IV infusion set with a filter. **Conclusion:** In neurosurgical patients, the use of TEE aids in determining the hemodynamic and volume status, screening for structural pathologies of heart such as patent foramen ovale in addition to diagnosing critical events like air embolism. The neuroanesthesiologist should be prepared to differentiate this 'Mannitol shower' from actual VAE, as they have an identical presentation on TEE imaging.

ISNACC-S-27

Venous air embolism during removal of bony spur in a child of split cord malformation: A case report

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Introduction: Venous air embolism (VAE) is one of the potential serious complication in neurosurgical patients. The incidence of VAE ranges from 16% to 86% but its incidence was reported to be lower in pediatric neurosurgical patients than adults. The incidence of VAE is higher in surgeries done in sitting position and VAE is not a common complication in patients operated in prone position especially in pediatric population. **Case Summary:** In our case, one year old female child with split cord malformation type 1 with tethered cord was operated for tethered cord release and one episode of VAE occurred while removal of bony spur. The child went into impending cardio-pulmonary arrest which was resuscitated with cardio-pulmonary resuscitation in prone position. Rest of surgery and anaesthesia was uneventful. In postoperative period, patient was

haemodynamically stable and discharged after 6 days. **Conclusion:** A special attention must be paid to detect and manage VAE in pediatric patients undergoing surgery for split cord malformation in prone position.

ISNACC-S-28

Time to emergence and factors affecting emergence in patients with aneurysmal subarachnoid hemorrhage following craniotomy: A prospective observational study

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Introduction: Rapid emergence is deemed necessary in the patients undergoing neurosurgery in order to permit an early neurological evaluation. The incidence of the early extubation in neurosurgical patients who underwent intracranial surgery has been around 82-89 %. However, the pattern of emergence in patients undergoing neurosurgery following an acute aneurysmal sub-arachnoid hemorrhage has not yet been reported.

Methods: The study is a prospective observational study conducted over a period of one and a half years. All the pre-operative (age, gender, weight, ASA, Hunt and Hess, WFNS, Fisher) and intra-operative data (Total anesthetic time, total surgical time, estimated total intraoperative blood loss, amount of intravenous fluids, urine output, temporary clipping time, IOR, temperature at the end of the surgery (≤ 36 or $>36^{\circ}\text{C}$), anesthetic drugs, brain bulge) data was recorded and analysed to assess the factors effecting emergence in the patients undergoing clipping.

Results: A total of 67 patients, aged 46 years [IQR - 40-53], 33 male and 34 female were included in the study. 44, 16 and 2 patients were of WFNS grade I, II and III at the time of the admission respectively. The number of the patients with admission CT Fisher grade I, II, III and IV were 6, 20, 25 and 16 respectively. At the time of the surgery 1 patient had GCS of 13 while 6 and 60 patients had a GCS of 14 and 15 respectively. The median time to emergence was 17 minutes (IQR 10-240 minutes). On univariate analysis the factors which were found to have significant co-relation with time to emergence were pre-operative GCS ($p = 0.002$, WFNS grade ($p = 0.005$, TC duration ($p = 0.03$) and the temperature at the end of the surgery ($p = 0.00$, In generalized linear model (γ - distribution), the temperature at the end of the surgery ($p = 0.0.00$), temporary clipping duration ($p = 0.008$), ASA grade ($p = 0.05$), Fischer grade ($p = 0.002$), duration of anaesthesia ($p = 0.042$) and GCS pre-induction ($p = 0.00$) had significant impact on the emergence time in patients undergoing clipping for ruptured aneurysm. **Conclusion:** None of the pre-operative and intra-operative factors had any