

ISNACC-S-60

A prospective randomized cross-over study to assess the effect of PEEP on optic nerve sheath diameter in patients under general anaesthesia**A. Suresh**

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Introduction: This study is designed to assess the effect of consecutive application of PEEP (5 and 10 cm H₂O OR 10 and 5 cm H₂O) following a vital capacity maneuver (VCM) on the ONSD in healthy patients randomized to a cross over trial i.e. Each patient is randomized to receive 5 and 10 cm H₂O PEEP in an ascending or descending manner. **Methods:** 100 patients of both sexes aged between 25-70 years, ASA physical status grades 1 and 2 scheduled for elective surgery under general anaesthesia were included in this study after signing an informed consent form. We randomized 100 patients by the closed envelop method to receive 1.5 cm H₂O PEEP followed by 10 cm H₂O PEEP OR 2.10 cm H₂O PEEP followed by 5 cm H₂O PEEP. We designed a randomized, cross over trial with the investigator blinded to the PEEP applied during the study. The co-investigator was responsible for the setting the allocated PEEP on the ventilator. Accepting an alpha level of 0.05 and a power of 0.90, using previous studies on ONSD we calculated a sample size of 100 patients. All data is given as mean +/- SD. Statistical significance was calculated by repeated measures 2 way analysis of variance (ANOVA). Statistical significance was defined as P<0.05. After a standard protocol of induction of anaesthesia, after 3 minutes of intubation vital capacity maneuver done, then base line (first set) respiratory, hemodynamic parameters and ONSD taken. Next PEEP of either 5 cm H₂O or 10 cm H₂O was given for 5 minutes, after that second set recordings noted. After that PEEP delivered was increased or decreased as per protocol and a third set of recordings was recorded. **Results:** In our randomized cross over study we found the application of PEEP to be useful in improving the lung compliance. Our methodology of using incremental and decremental PEEP allowed us to assess its effect on hemodynamics with minimal confounding factors. We found a consistent fall in heart rate (HR) and blood pressure (BP) with increasing PEEP. There was a statistically significant increase in the ONSD with increasing PEEP (p value <0.0010), however 21% of the patients were noted to have ONSD >0.45 cm. **Conclusion:** Recruitment maneuvers and PEEP increase the compliance of the lungs during general anaesthesia and should be used as part of lung protective strategy in modern anaesthesia care. Significant increase in ONSD is noted with low to moderate level of PEEP. The

importance of ONSD lies in its inherent non-invasiveness and ability to be a surrogate marker for ICP.

ISNACC-S-61

Evaluation of analgesia nociception index as a tool to monitor pain and manage analgesia during supratentorial craniotomies**K. Theerth, S. Kamath, M. Reddy, D. Chakrabarti**

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Introduction: Administration of analgesics is guided by clinical experience and by monitoring for somatic responses, such as movement, sweating and increase in heart rate or blood pressure, during surgery. Analgesia Nociceptive Index (ANI) provides objective information about the degree of intraoperative pain and adequacy of analgesia. We conducted a prospective, randomized, double blinded study to assess ANI changes during induction, periods of nociceptive stimulation and recovery and compare ANI in patients, who receive scalp block or infiltration at pin and incision sites. **Methods:** Sixty adult patients scheduled for elective supratentorial surgery were randomly allocated to receive scalp block or pin and incision site infiltration after induction of anaesthesia. ANI and haemodynamic parameters were recorded and analysed. **Results:** Thiopentone caused a significant decrease in instantaneous ANI (AN_I) [59 vs 45 p < 0.001, (median pre vs post)] in the three minutes after administration. Laryngoscopy caused a significant decrease in AN_I (59 vs 45, p < 0.001). AN_I decreased significantly in the three minutes following pin fixation in the skin infiltration group (68 vs 28; p < 0.001) but not in the scalp block group (63 vs 50, p = 0.151). There was no significant change in the AN_I values during three minutes of skin incision in both the groups. AN_I decreased significantly following extubation in both the groups (57 to 44 and 44.5 to 39 in scalp block and infiltration group respectively, p<0.001). **Conclusion:** ANI decreases below 50 following thiopentone administration and laryngoscopy. Scalp block provides better analgesia for pin fixation compared to infiltration as demonstrated by ANI. Scalp block or infiltration at the incision site effectively prevented a decrease in ANI values during skin incision. ANI decreases significantly after extubation.

ISNACC-S-62

Prolonged recovery in an acromegalic patient with dilated cardiomyopathy: Points to ponder**P. Tiwari, A. N. Shetty, S. Oak**

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Introduction: Dilated cardiomyopathy is an uncommon yet life threatening complication in acromegalic patients. Anesthetic management can be a challenge in the event of poor preoperative optimization in the event of emergency surgery. **Case Summary:** A 33 year old female patient with visual field defects of the right eye since 6 months was diagnosed to have pituitary macro adenoma and posted for trans sphenoidal excision. The case was an emergency in view of progressive visual loss owing to pressure effects on the optic chiasma. On examination, vitals were stable albeit the presence of B/L basal creptitations. 2D Echo revealed dilated cardiomyopathy with EF = 18% and was started on ACE inhibitors, beta blockers, statins and diuretics 2 days prior surgery. Anesthesia was induced with inj etomidate 0.2 mg/kg, inj fentanyl 2 mcg/kg and inj rocuronium 1 mg/kg. Anaesthesia was maintained with nitrous oxide: Oxygen (50:50), sevoflurane and atracurium 0.25 mg/kg. Dobutamine infusion started at 5 mcg/kg/min, surgery proceeded uneventfully. Vitals were maintained throughout. After the surgery patient was reversed with inj neostigmine 0.05 mg/kg. However owing to poor neuromuscular tone and breathing the patient was electively ventilated for one day. This prolonged action of anesthetic drugs could be attributed to the low cardiac output status of the patient. **Conclusion:** Anesthetic management requires minimal use of anesthetics with minimal perturbations in hemodynamics. Adequate Preoperative optimization and ICU care could help in improving post operative outcomes in acromegaly patients with DCM.

ISNACC-S-63

Acute hypotension as a manifestation of seizures intraoperatively

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Introduction: The most common hemodynamic change observed during seizures is sympathetic activation. But dysautonomia associated with seizures leading to hypotension is also a probability in such situations. **Case Summary:** We report an unusual manifestation of seizures as significant hypotension in a young lady who underwent a transcranial decompression of pituitary macroadenoma. The first episode occurred during the intraoperative period (fall in systolic blood pressure (BP) from 110 to 30 mm Hg) but the clinical manifestations were masked because of general anesthesia and muscle

relaxation. On the second occasion, a GTCS occurred in the intensive care unit with concomitant hypotension (systolic BP falling to 40 mm Hg). Both episodes required vasopressor support to restore BP to normal levels. **Conclusion:** Acute hypotension unexplainable by other causes can be a manifestation of seizure during anesthesia for neurosurgery. Hypotension caused by dysautonomia can produce cerebral hypoperfusion and prolong EEG suppression leading to a vicious cycle. So rapid identification of seizure as a cause for hypotension and its prompt control, can avoid further cerebral ischemia during neurosurgeries.

ISNACC-S-64

Efficacy and safety of priming principle in propofol induction

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Introduction: Reduction in induction dose of Propofol may help in reducing adverse hemodynamic events and anaesthetic cost. In this study the 'priming principle' was used during induction with Propofol and dose requirements and hemodynamic changes were assessed. **Methods:** Eighty ASA I and II patients of both gender, aged between 18 to 55 years planned for elective surgical procedure under general anaesthesia were randomly allocated into equal numbers as two groups: Group P (Priming), Group NP (Non-priming). The calculated propofol dose was 2 mg/Kg. Inj Fentanyl 1 µg/Kg was given to all patients. Standard ASA monitoring and BIS were used. Group P received 20% of the calculated Propofol dose and after 2 minutes the remaining drug was given. In group NP bolus Propofol was given. In both groups propofol was administered at the rate of 30 mg in 10 seconds till loss of verbal response. Inj Suxamethonium 2 mg/Kg was used for intubation. Total dose of propofol, BIS values after propofol administration, hemodynamic parameters including heart rate, blood pressure were recorded before and after induction, 1 minute and 5 minutes after intubation. **Results:** Both groups were comparable in demographics and baseline hemodynamic parameters. The total dose of propofol was significantly less (39.8%) in Group P than Group NP (67.0 ± 17.9 mg; 111.3 ± 17.6 mg; p<0.01). The BIS values at end point were comparable. In group NP heart rate was significantly high and blood pressure values were low in all time points after induction. **Discussion:** The priming principle significantly reduced induction dose of Propofol with less incidence of hypotension. This principle can be useful where minimal hemodynamic fluctuations during induction is warranted.