

the tumor resection, there was a mild decrease in SSEP (<10%) and there was no change in TcMEP. Also, postresection intact triggered EMG was elicited in the muscle groups. This is the first such report on use of TcMEP and SSEP.

**Conclusion:** TcMEP and SSEP can be used in tumors on peripheral nerves where nerve action potentials are not feasible.

**Keywords:** sciatic nerve tumor, transcranial motor evoked potentials, somatosensory evoked potentials

## References

1. Porat M, Orozco F, Goyal N, Post Z, Ong A. Neurophysiologic monitoring can predict iatrogenic injury during acetabular and pelvic fracture fixation. *HSS J* 2013;9(3):218–222

### A005 Effect of Intra-arterial Nimodipine on Cerebral Oxygen Saturation and Cardiac Indices in Patients with Cerebral Vasospasm after Aneurysmal Subarachnoid Hemorrhage

Sriganesh Kamath<sup>1</sup>

<sup>1</sup>National Institute of Mental Health and Neurosciences, Bengaluru, Karnataka, India

**Introduction:** Delayed cerebral ischemia from vasospasm results in morbidity and mortality after aneurysmal subarachnoid hemorrhage (aSAH).<sup>1</sup> Intra-arterial nimodipine (IaN) relieves symptomatic vasospasm after aSAH with both angiographic and neurological improvement.<sup>2</sup> However, hypotension is common during IaN treatment and can result in cerebral hypoperfusion thus negating the net benefit. This study aimed to assess the effect of IaN on cerebral oxygen saturation (cSO<sub>2</sub>) and cardiac indices during IaN therapy for cerebral vasospasm.

**Methodology/Description:** The ISNACC-funded prospective cohort study was conducted in 17 patients over 16 months after ethics committee approval and informed consent. Patients with neurological/angiographic evidence of vasospasm received IaN (3 mg over 20 minutes) in the spastic vessel. The cSO<sub>2</sub>, heart rate, mean blood pressure (MBP), and cardiac indices (cardiac index [CI], stroke volume index, stroke volume variation, and systemic vascular resistance index [SVRI]) were recorded from baseline until completion of IaN treatment.

**Results:** The mean age and BMI was 52.7 (10.8) years, 24.2 (3.6) kg/m<sup>2</sup>, respectively. On paired *t*-test analysis, mean change in ipsilateral and contralateral cSO<sub>2</sub> (%) after IaN was not significant ( $0.13 \pm 3.7$  [ $p = 0.89$ ] and  $1.3 \pm 5.4$  [ $p = 0.37$ ], respectively). After IaN, mean change in diameter (mm) of spastic vessel was significant ( $0.48 \pm 0.47$ ;  $p = 0.007$ ), but not in contrast transit time (sec;  $1.3 \pm 2.2$ ;  $p = 0.08$ ). Significant decrease in MBP (mm Hg) and SVRI (dyne\*sec/cm<sup>-5</sup>/m<sup>2</sup>) and increase in CI (L/min/m<sup>2</sup>) were noted after IaN (mean change  $13.8 \pm 11.8$  ( $p < 0.001$ ),  $685 \pm 644$  ( $p = 0.001$ ), and  $0.62 \pm 0.56$  ( $p = 0.002$ ), respectively).

**Conclusion:** IaN resulted in dilation of spastic vessel without change in cSO<sub>2</sub>. Cardiac indices changed significantly with IaN.

**Keywords:** aneurysmal subarachnoid hemorrhage, IaN, SVRI

## References

1. Schmidt U, Bittner E, Pivi S, Marota JJ. Hemodynamic management and outcome of patients treated for cerebral vasospasm with intraarterial nicardipine and/or milrinone. *Anesth Analg* 2010;110(3):895–902
2. Dehdashti AR, Binaghi S, Uske A, Regli L. Intraarterial nimodipine for the treatment of symptomatic vasospasm after aneurysmal subarachnoid hemorrhage: a preliminary study. *Neuro India* 2011;59(6):810–816

### A006 Comparison of Two Infusion Doses of Dexmedetomidine on Perioperative Hemodynamics and Recovery Characteristics in Patients Undergoing Endoscopic Pituitary Decompression Surgery:

**A Randomized, Prospective, Single-Blind Study**  
Hetal Rathod,<sup>1</sup> Hitesh Nathani,<sup>1</sup> Shwetal Goraksha,<sup>1</sup> Joseph Monteiro<sup>1</sup>

<sup>1</sup>Department of Anesthesiology, P. D. Hinduja Hospital and Medical Research Centre, Hinduja Hospital, Mumbai, Maharashtra, India

**Introduction:** Endonasal transsphenoidal resection of pituitary tumor involves wide fluctuation in hemodynamic parameter due to intense noxious stimulus at various stages of surgery. None of routinely used anesthetic agents effectively blunts undesirable hemodynamic responses with favorable recovery. Dexmedetomidine significantly attenuates the hemodynamic responses and maintains intraoperative cardiovascular stability which depends on its concentration. Primary aim of this study is to compare maintenance of hemodynamic stability and recovery characteristic between 0.5 and 0.7 µg/kg/h infusion doses of dexmedetomidine.

**Methodology/Description:** Study was conducted after obtaining approval from Institutional Review Board. Sample size of 42 patients (21 + 21) was determined using “MedCalc” and patients were randomized into one of the two arms based on computer-generated random numbers. Hemodynamic parameters and recovery characteristics were noted at various time intervals. Results were analyzed by ANOVA.

**Results:** Both groups were comparable in terms of demographic characteristics. There was statistically significant difference in hemodynamic parameters at all the mentioned time interval between Group D0.5 and Group D0.7, with patients in Group D0.7 being more stable. Recovery characteristics also showed statistically significant difference, that is, extubation time being  $13.35 \pm 2.47$  and  $20 \pm 3.88$  minutes in Group D0.5 and Group D0.7, respectively.

**Conclusion:** Use of dexmedetomidine infusion in endonasal pituitary decompression surgery offered equivalent hemodynamic stability and an optimal surgical field at both the infusion regimes without any hemodynamic complications. However, the recovery characteristics were significantly desirably faster with the lower concentration

regime. Dexmedetomidine infusion is both efficacious and safe in endonasal pituitary decompression surgery.

**Keywords:** dexmedetomidine, endonasal transsphenoidal resection, hemodynamic parameter

## References

1. Gopalakrishna KN, Dash PK, Chatterjee N, Easwer HV, Ganesamoorthi A. Dexmedetomidine as an anesthetic adjuvant in patients undergoing transsphenoidal resection of pituitary tumor. *J Neurosurg Anesthesiol* 2015;27(3):209–215
2. Pathak AS, Paranjpe JS, Kulkarni RH. Comparison of two doses of dexmedetomidine on haemodynamic stability in patients undergoing laparoscopic surgeries. *JKIMSU* 2016;5(3):35–43

### A007 Prone Position Ventilation in a Patient of Severe ARDS with Raised Intracranial Pressure

**Hemanth Waghmare,<sup>1</sup> M. M. Harish,<sup>1</sup> Durgesh Satalkar,<sup>1</sup> Pavan K. Vala,<sup>1</sup> Mahendra Bagul,<sup>1</sup> M. Nitin,<sup>1</sup> B. M. Ramya,<sup>1</sup> K. Rajesh<sup>1</sup>**

<sup>1</sup>Department of Critical Care Medicine, Yashoda Hospitals, Secunderabad, Telangana, India

**Introduction:** Acute respiratory distress syndrome (ARDS) is common clinical problem in intensive care patients. It is characterized by high mortality. The mainstay of treatment is lung protective ventilation. Current evidence supports prone position ventilation in patients with ARDS having P/F ratio < 150. The only absolute contraindications stated for prone position ventilation are unstable vertebral fracture and unmonitored or significantly raised intracranial pressure.

**Methodology/Description:** A 27-year-old male was admitted after a road traffic accident with a left fronto-temporo-parietal subdural hemorrhage with diffuse cerebral edema and bilateral diffuse pulmonary contusion. He was intubated in view of poor neurological status. He underwent decompressive craniectomy for raised intracranial pressure (ICP). In due course, he was tracheostomized. Later on, he developed bilateral chest infiltrates with hypoxia. He was diagnosed as severe ARDS (PF ratio < 100). He was decided for prone position ventilation. He was ventilated for 20 hours in prone position and 4 hours supine position in a day. After turning supine, ABG was done after 4 hours. Next session of proning was determined if PF ratio still < 150. He was given prone ventilation sessions daily for 5 days. After fifth proning, his oxygenation improved and further he did not require prone ventilation. Subsequently, he was decannulated and discharged without any neurological sequelae.

**Conclusion:** Proning can be safely considered in neurotrauma patients with severe ARDS on case to case basis.

**Keywords:** acute respiratory distress syndrome, neurotrauma, prone position ventilation, intracranial pressure

## References

1. Kayani AS, Feldman JP. Prone ventilation in a patient with traumatic brain injury, bifrontal craniectomy and intracranial hypertension. *Trauma* 2014;17(3):224–228

2. King CS, Altaweel L. Mechanical Ventilation in Traumatic Brain Injury. In: Ecklund J., Moores L, eds. *Neurotrauma Management for the Severely Injured Polytrauma Patient*. Cham: Springer; 2017:229–237

### A008 Comparative Analysis of Effect of Pressure-Controlled and Volume-Controlled Ventilation on Respiratory Mechanics and Hemodynamics in Patients Undergoing Lumbar Spine Surgery in Prone Position

**Divya Gupta<sup>1</sup>**

<sup>1</sup>Department of Anaesthesiology, SMS Medical College, Jaipur, Rajasthan, India

**Introduction:** General anesthesia in prone position is related with increased airway pressure, decreased pulmonary, and thoracic compliance.

**Aim:** To compare pressure-controlled (PCV) and volume-controlled (VC) ventilation in patients undergoing lumbar spine surgery in prone position.

**Methodology/Description:** After ethics committee approval and written informed consent, a comparative randomized interventional study was conducted from March to June 2017. Patients were randomized in two groups of 30 each using sealed envelope method with 80% power and 97.5% confidence interval of the study. Patients of either sex, ASA grade I and II, age 20 to 65 years were included, while those with severe pulmonary disease and BMI > 30 kg/m<sup>2</sup> were excluded. Mean and standard deviation were calculated for quantitative data while proportions for qualitative data. For significance of difference, chi-squared test was used for proportions and unpaired *t*-test for mean. A *p*-value of < 0.05 was considered to be significant. Peak airway pressure (P-peak), PaO<sub>2</sub> levels, PaCO<sub>2</sub> levels, mean airway pressure, dynamic compliance, heart rate, systolic blood pressure, diastolic blood pressure, and mean arterial pressure were measured.

**Results:** Demographic parameters and perioperative hemodynamic values were comparable with no significant statistical difference. The P-peak levels were significantly higher in Group VC as compared with Group PC (*p* < 0.05). Dynamic compliance levels during prone position were higher in Group PC when compared with Group VC. Postoperative PaO<sub>2</sub> level was significantly higher in Group PC compared with Group VC.

**Conclusion:** According to our study, PCV mode is associated with lower P-peak levels during prone position and better oxygenation postoperatively. We concluded that PCV mode might be more appropriate in prone position during anesthesia.

**Keywords:** anesthesia, PCV, VC

## References

1. Sen O, Bakan M, Umutoglu T, Aydın N, Toptas M, Akkoc I. Effects of pressure-controlled and volume-controlled ventilation on respiratory mechanics and systemic stress response during prone position. *Springerplus* 2016; 5(1):1761
2. Jiang J, Li B, Kang N, Wu A, Yue Y. Pressure-controlled versus volume controlled ventilation for surgical patients: a