

to the age group 8 to 18 years. One hundred one children underwent surgical fixation of cervical spine under anesthesia. Intravenous anesthetic agents were used for induction, and inhalational anesthetics were used for the maintenance of anesthesia. In majority of the children (62.4%), the airway was secured with fiberoptic intubation. Children in the age group 0 to 8 years (56.3%) had better outcome as compared with those in 8 to 18 years age group (39.6%). Fall from height constituted the major cause of injury ($n = 68$, 69.6%), and majority of the children suffered injury at the upper cervical spine (58.9%). Spinal canal was compromised in 77.4% of children and these children had poor outcome. Various complications were observed in 45 (40.2%) children during their hospital stay and 37 (82.2%) of these children had poor outcome. Nine children died owing to different reasons.

Conclusion: The overall outcome was good in 42% of children with CSI. The outcome at discharge was poor in children belonging to the age group of 8 to 18 years, who had compromised spinal canal, ASIA scale (A, B, or C) at admission, and those who suffered complications during the hospital stay.

Keywords: fiberoptic intubation, CSI, anesthetic

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A012 Remote Ischemic Preconditioning in Decreasing Post-Electroconvulsive Therapy-Induced Cognitive Dysfunction

Ravitej Ravitej,¹ V. J. Ramesh,¹ Jagadish Thirthahalli,¹ K. N. Gopalkrishna,¹ Naveen Kumar¹

¹Department of Neuroanaesthesia, NIMHANS, Bangalore, Karnataka, India

Introduction: Ischemic injury has been implicated in causing post-electroconvulsive therapy (ECT) cognitive dysfunction. Remote ischemic preconditioning (RIPC) causes nonlethal ischemia on a limb, which results in protection of distant organ from ischemic injury. Hence, we studied the role of RIPC in decreasing post-ECT cognitive dysfunction.

Methodology/Description: The study was conducted on 80 patients after obtaining their informed consent and ethics committee approval. Patients 18 to 65 years of age, of either gender with a diagnosis of schizophrenia and ASA 1 to 2, were included. The patients were randomized into two groups. The intervention group received RIPC and the control group received sham RIPC before each ECT session for six such ECTs. The RIPC protocol included three 5-minute cycles of upper limb ischemia inflated to a cuff pressure of 30 mm Hg above the systolic BP with 5 minutes intervals of reperfusion in between. The cuff in the control group was inflated to a pressure of 30 mm Hg only. The cognitive assessment was done before the first and after the sixth ECT. Mann-Whitney U test, ANOVA, and paired *t*-test were used for analysis of data.

Results: There was no significant statistical difference in the cognitive and memory assessment scores of HMSE test ($p = 0.908$), PGI memory scale test ($p = 0.123$), B4ECT ReCODE test ($p = 0.308$) both within and in between the two groups.

Conclusion: RIPC has not been found effective in preventing cognitive and memory impairment post-ECT in schizophrenia patients.

Keywords: RIPC, ECT, ASA

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A013 Clinical Efficacy of Scalp Infiltration with 0.25% Levobupivacaine to Attenuate Hemodynamic Response to Skull Pin Insertion in Supratentorial Craniotomies under General Anesthesia

Paulomi Dey,¹ Veena Ganeriwal¹

¹Department of Anesthesiology, Grant Government Medical College and Sir J. J. Hospital, Maharashtra, India

Introduction: Sudden hemodynamic changes caused by skull pins in neurosurgery can be prevented by combining scalp block, which blocks both the superficial and deep layers of the scalp. Levobupivacaine has been used in 0.75% and 0.5% concentrations for this purpose. However, no previous study has determined the efficacy of 0.25% levobupivacaine for scalp block.

Aims: To determine the effects of scalp block with 0.25% levobupivacaine on the hemodynamic response to head pinning and incision during craniotomy and evaluate the analgesic requirements intraoperatively.

Methodology/Description: This prospective observational study included 50 patients, after obtaining approval from ethics committee of Grant Government Medical College and Sir J.J. Hospital and written informed consent from patients (ASA status, I or II; age, 18 to 60 years) who underwent supratentorial craniotomy at this institute. Patients with coagulation disorders, inflammatory skin lesions, pre-existing neuropathies, pregnant and lactating mothers were excluded. Scalp block with 20 mL of 0.25% levobupivacaine was given bilaterally after induction of general anesthesia and prior to application of Mayfield skull pin head holder. The hemodynamic parameters were recorded at baseline, during scalp block and after head pin insertion, incision, and at craniotomy.

Results: Values of heart rate and blood pressure before and after anesthesia induction compared with values after painful stimuli were in the 10 to 15% range. Mean intraoperative fentanyl requirement was 150 μg (2–3 $\mu\text{g}/\text{kg}$).

Conclusion: Levobupivacaine (0.25%) when used for scalp block ensures hemodynamic fluctuation of upto

15% during head pinning, incision, and craniotomy without any complications or increased analgesic requirements intraoperatively.

Keywords: craniotomy, levobupivacaine, hemodynamic parameters

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A014 Comparison of 0.375% Levobupivacaine, 0.375% Bupivacaine, and 0.375% Ropivacaine in Terms of Analgesia and Hemodynamic Stability following Scalp Block in Patients Undergoing Awake Craniotomy: A Prospective Randomized Double Blind Study

Hitesh Nathani,¹ Hetal Rathod,¹ Bhoomika Thakore,¹ Joseph Monteiro¹

¹Department of Anaesthesiology, P. D. Hinduja Hospital and M. R. C., Mumbai, Maharashtra, India

Introduction: The anesthetic challenges of awake craniotomy are to maintain adequate sedation, analgesia, and hemodynamic stability in an awake patient who should be able to cooperate during intraoperative neurological assessment. Conventionally, scalp block is performed with racemic bupivacaine with epinephrine. Studies on bupivacaine isomers have shown reduced cardiovascular toxicity of its levorotatory form (levobupivacaine). Ropivacaine, the S(-) enantiomer of bupivacaine analogue, is known to have lesser cardiotoxicity with similar pain relief at equivalent analgesic doses in comparison to bupivacaine. This study was undertaken to compare levobupivacaine, bupivacaine, and ropivacaine for analgesia and hemodynamic stability and complications following scalp block in awake craniotomy patients.

Methodology/Description: The study was conducted at the Department of Neuroanesthesiology, P D Hinduja Hospital and M.R.C, Mumbai, after obtaining approval from the Institutional Review Board. Sample size of 42 patients (14 + 14 + 14) was determined using “MedCalc” and patients were randomized into one of the three arms based on computer-generated random numbers. Analgesia and hemodynamic parameters were noted at various time intervals. Results were analyzed by the Kruskal–Wallis test.

Results: All three groups were comparable in terms of demographic characteristics. There was no statistically significant difference in the VAS scores and hemodynamics at Application of Mayfield head pin ($p = 0.54$), skin incision ($p = 0.98$), craniotomy ($p = 0.299$), raising of bone flap ($p = 0.47$), opening of dura ($p = 0.50$), replacing of bone flap ($p = 0.14$), and skin closure ($p = 0.41$) in all three groups.

Conclusion: Levobupivacaine and ropivacaine provided equally good analgesia, hemodynamic parameters and

operating conditions as racemic bupivacaine and can be used routinely in our armamentarium of drugs for scalp block in awake craniotomy with better safety profiles.

Keywords: ropivacaine, levobupivacaine, awake craniotomy

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A015 Optic Nerve Sheath Diameter Measured by Ultrasonography: How Well Does It Correlate with Intracranial Pressure According to the New Brain Trauma Foundation Guidelines?

Seelora Sahu,¹ Amlan Swain,¹ Nidhi Panda,² Hemant Bhagat,² Preethy Matthews,² Sunil Kumar Gupta²

¹Department of Anaesthesia and Critical Care, Tata Main Hospital, Jamshedpur, Jharkhand, India

²Department of Anaesthesia and Intensive Care, Post Graduate Institute of Medical Education and Research, Chandigarh, India

Introduction: Bedside ultrasonography (USG), measurement of optic nerve sheath diameter (ONSD) has been proposed as a method to detect raised intracranial pressure (ICP) in various clinical settings. We aimed to evaluate the use of USG in the case of intracranial hypertension and find out the cutoff point that predicts ICP accurately at 22 mm Hg.

Methodology/Description: A retrospective analysis of the data collected from a prospective double-blind study performed by performing ocular ultrasounds in 52 adult patients with features of intracranial hypertension was done. The ONSD was measured by USG under anesthesia and compared with the intraventricular ICP measured simultaneously. The optimum cutoff of ONSD to predict ICP > 22 mm Hg was sought.

Results: There was a significant correlation of sonographic ONSD with ICP ($r = 0.498$, $p = 0.000173$). An ONSD threshold of 6.3 mm predicted ICP > 22 mm Hg with high sensitivity (89%) and specificity (73%, area under ROC curve = 0.814, $p = 0.000424$, CI = 0.672–0.956).

Conclusion: Our study confirms the utility of optic nerve ultrasound in the diagnostic evaluation of patients with known or suspected intracranial hypertension. We recommend an ONSD cutoff of 6.3 mm for predicting ICP > 22 mm Hg.

Keywords: ONSD, ICP, ultrasound

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