

Comparison of dexmedetomidine, propofol and midazolam for short-term sedation in postoperatively mechanically ventilated neurosurgical patients

Vinit K. Srivastava¹, Sanjay Agrawal²,
Sanjay Kumar³, Abhishek Mishra⁴,
Sunil Sharma⁵, Raj Kumar⁵

¹Consultant Neuro-Anaesthesiologist, ⁵Senior Consultant Neurosurgery, ⁴Apollo Hospitals Bilaspur, Chhattisgarh,

²Professor, Himalayan Institute of Medical Sciences, Dehradun, Uttarakhand, ³Assistant Professor, Sanjay Gandhi Post Graduate Institute of Medical Sciences, Lucknow, Uttar Pradesh, India

Background: Effective management of analgesia and sedation in the intensive care unit depends on the needs of the patient, subjective and/or objective measurement and drug titration to achieve specific endpoints. The present study compared the efficacy of dexmedetomidine, propofol and midazolam for sedation in neurosurgical patients for postoperative mechanical ventilation. **Materials and Methods:** Ninety patients aged 20–65 years, ASA grade I to III, undergoing neurosurgery and requiring postoperative ventilation were included. The patients were randomly divided into three groups of 30 each. Group D received dexmedetomidine 1 mcg/kg over 15 minutes as a loading dose, followed by 0.4–0.7 mcg/kg/h. Group P received propofol 1 mg/kg over 15 minutes as a loading dose, followed by 1–3 mg/kg/h. Group M received midazolam 0.04 mg/kg over 15 minutes as a loading dose, followed by 0.08 mg/kg/h. Heart rate, mean arterial pressure, sedation level, fentanyl requirement, ventilation and extubation time were recorded. **Results:** Adequate sedation level was achieved with all three agents. Dexmedetomidine group required less fentanyl for postoperative analgesia. In group D there was a decrease in HR after dexmedetomidine infusion ($P < 0.05$), but there was no significant difference in HR between group P and group M. After administration of study drug there was a significant decrease in MAP comparison to baseline value in all groups at all time intervals ($P < 0.05$), except post extubation period ($P > 0.05$). Extubation time was lowest in group P ($P < 0.001$). **Conclusion:** Dexmedetomidine is safer and equally effective agent compared to propofol and midazolam for sedation of neurosurgical mechanically ventilated patients with good haemodynamic stability and extubation time as rapid as propofol. Dexmedetomidine also reduced postoperative fentanyl requirements.

Is cerebral protection beneficial during bypass surgery for moyamoya disease?

Vivek Rayadurg, Sabina Jagdevan, Sriganesh Kamat, Madhusudhan Reddy

National Institute of Mental Health and Neurosciences, Bangalore, Karnataka, India

Background: Moya Moya disease (MMD) is characterized by progressive steno-occlusion of terminal internal carotid arteries (ICA). Direct anastomosis between superficial temporal artery (STA) and distal segment of middle cerebral artery (MCA) is the preferred reperfusion technique whenever feasible. Temporary vessel occlusion (TVO) during the procedure results in distal cerebral blood flow reduction and hence cerebral protective measures are instituted. This study aims to evaluate the influence of standard anaesthetic management and additional intraoperative cerebral protective measures on in-hospital stay and postoperative outcome in patients undergoing STA-MCA bypass for MMD. **Materials and Methods:** MMD patients undergoing STA-MCA bypass between April 2011 and March 2014 were retrospectively studied. Data collected included demographic details, disease characteristics, variables related to anaesthetic management and perioperative haemodynamic, and details about cerebral protective strategies. Primary outcome evaluated was occurrence of new postoperative neurological deficits (POND) or death during hospital stay; secondary outcome was length of postoperative hospital stay. **Results:** Four out of forty patients developed new POND. No association between cerebral protective measures and occurrence of POND was observed. When age-independent factors significant on univariate analysis were entered into a regression model, none of the factors were predictive of POND. No factor was predictive of prolonged hospital stay other than occurrence of POND. **Conclusion:** This study does not demonstrate any advantage of additional interventions during TVO, with respect to POND and length of hospital stay, in comparison with standard care. Presumably, routine use of cerebral protective measures during TVO may not benefit MMD patients if collateral circulation is adequate.

Superficial cervical plexus block for postoperative analgesia in patients undergoing infratentorial surgeries and occipital craniotomies

Vinita Naidu, Rajashree Gandhe

Kokilaben Dhirubhai Ambani Hospital, Mumbai, Maharashtra, India

Background: In this study we compared the effectiveness of the superficial cervical plexus block in patients undergoing infratentorial surgeries and suboccipital craniotomies as compared to inj. Paracetamol and inj. fentanyl for postoperative analgesia. **Materials and Methods:** In this study, 40 patients scheduled for infratentorial and suboccipital craniotomies were randomly divided into 2 groups. Group B (received