The pharmacokinetics of desflurane makes it a preferred inhalational agent with low flow techniques. However, vigilance of the anesthesiologist is of prime importance.

Methodology/Description: After approval of institutional ethics committee and informed consent, 60 ASA I/II patients undergoing elective neurosurgical procedures were divided randomly into two equal groups to receive general anesthesia with low (1L) and medium (1.5 L) fresh gas flow (50% O_2 and 50% N_2O). Intraoperative monitoring of hemodynamic parameters and respiratory gases was done and noted at fixed intervals. Statistical analysis of data was done using SPSS.

Results: Demographic data was comparable in both the groups. Hemodynamic parameters at laryngoscopy, change of flows, and emergence were within physiological range. Hemodynamic stability was not affected by change in flows in both the groups. During maintenance, fraction of inspired oxygen (FiO_2) decreased gradually, but at no time interval, delivery of hypoxic gas mixture (FiO_2< 30%) was observed. Time taken for extubation was comparable in both the groups.

Conclusion: With vigilant monitoring of respiratory gases and hemodynamic parameters, and timely interventions for change of flows, dial settings, etc., the threat of delivery of hypoxic gas mixture in low-flow anesthesia can be totally eliminated. This technique with all its advantages can be used safely in neurosurgical cases.

Keywords: fraction of inspired oxygen, anesthesia, hemodynamic parameters

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A030 An Evaluation of Procedural Sedation Techniques in Duchenne Muscular Dystrophy Patients Undergoing Stem Cell Therapy

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Introduction: Anesthesia in Duchenne muscular dystrophy (DMD) poses many challenges, because of poor cardiorespiratory function, weak airway muscles, macroglossia, or obstructive sleep apnea. The present study was undertaken to evaluate safety as well as efficacy of procedural sedation techniques, and to assess the effect on hemodynamic and respiratory parameters in patients of DMD.

Methodology/Description: The present prospective, observational study was performed in 54 consecutive male patients of DMD presenting for stem cell therapy. After institutional ethics committee approval, patients coming for elective bone marrow aspiration and intrathecal catheterization as a part of stem cell therapy with age > 5 years were included. Patients unwilling for consent and patients requiring general anesthesia were excluded. Drugs and dosages used were noted. Hemodynamic parameters were noted every 5 minutes. Sedation levels were monitored using Ramsay sedation score every 10 minutes. Statistical analysis was done using the unpaired "*t*" test and *p* value of < 0.05 was considered significant.

Results: The age range was from 6 to 32 years with average of 11.59 years. Most commonly used drugs for procedural sedation were midazolam, dexmedetomidine infusion, and ketamine. Hemodynamic stability was maintained in all patients. Respiratory rate and end-tidal CO_2 were maintained close to baseline (p > 0.05). No cardiorespiratory adverse events were noted.

Conclusion: Dexmedetomidine and ketamine provide good procedural sedation without causing cardiorespiratory depression, maintain airway reflexes, and offer adequate analgesia along with local anesthesia. The study subject draws attention to an often-neglected area and has scope for change in future practice.

Keywords: Duchenne muscular dystrophy, procedural sedation, cardiorespiratory depression

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A031 Effectiveness of Three Regimes of Sedation in Children for Magnetic Resonance Imaging: A Clinical Trial

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Introduction: Dexmedetomidine, an α_2 agonist is extensively used for pediatric magnetic resonance imaging (MRI) sedation, but is known to cause prolonged recovery when used as a sole sedative agent. Stand-alone propofol can cause hypotension and respiratory depression at times. A new regimen exploiting the properties of these drugs was considered to allow faster recovery and minimize adverse events.

Methodology/Description: One hundred fifty children between the age of 2 and 12 years were randomly allocated to any of the three groups. Group receiving dexmedetomidine bolus and infusion (group D, n = 50) or propofol bolus and infusion (group P, n = 50) or group receiving propofol bolus followed by dexmedetomidine infusion (group PD, n = 50) for sedation. Effectiveness of these regimens was assessed with respect to recovery characteristics, hemodynamics, and respiratory parameters.