TIVA safety in pediatric patients with cystic fibrosis and Kartagener syndrome undergoing FESS

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Background

The aim of this retrospective study is to assess the safety of Total IntraVenous Anesthesia (TIVA) for patients with cystic fibrosis (CF) or Kartagener syndrome (KS) that underwent Functional endoscopic sinus surgery (FESS) procedures in the years between 2014 - 2017.

TIVA has been pointed as the first choice for the restraint of bleeding compared to inhaled agents in this kind of procedures. In this particular cluster of patients, the choice of anesthesia is even more critical due to higher risks of respiratory depression or postoperative pulmonary function decline. There is scant literature about this matter, but TIVA seems to ensure the most rapid awakening and tracheal extubation times with the lowest risk of respiratory depression.

Methods

We reviewed anesthesia charts and hospitalization records of 31 patients (17 females, 14 males; age 4 to 25 yrs), that underwent FESS (18) or FESS revision (13) between 2014-2017; 29 were affected by CF and 2 by KS.

Written consent for surgical and anesthetic procedures was obtained for all patients. A preoperative spirometry was performed.

All the procedures were conducted with TIVA (Propofol and Remifentanyl) Younger children were induced with inhaled agents (N₂O, Sevoflurane) and maintained with TIVA. Oral intubation was performed in all cases. We evaluated the time between end of the procedure and oral extubation, the occurrence of perioperative or post-operative complications, time of discharge from hospital.

Results

All 31 patients have been discharged 24 hours after the surgery. Propofol administration was stopped immediately before the placement of nasal swabs, remifentanyl was gradually reduced and completely stopped at the removal of sterile field. All patients resumed consciousness in times between 3 to 8 minutes after remifentanyl suspension and were extubated 1 to 4 minutes after. Perioperative complications occurred in 5 cases: 3 hypotension events after induction that required administration of ephedrine, 2 mild desaturations (Spo₂ 92%) that required deepening anesthesia and spontaneously resolved.

Conclusions

These data suggest that TIVA is a safe anesthesia technique for patients with CF or KS in this particular surgical field. Anesthesia for CF patients should be object of further studies.

Kartagener syndrome