The child with highest level of gastric CO_2 was bag-mask ventilated for 10 minutes.
Significant levels of CO_2 are found in the stomach following bag- mask ventilation in young children. These levels are sufficiently high to cause confusion when using the $ETCO_2$ trace as evidence of successful tracheal intubation. Holding a face mask and ventilating using a Jackson-Rees circuit can result alveolar gas rich in CO_2 entering the stomach. Presence of volatile agent in the gas was also consistence with an alveolar origin. The longer and more difficult the period of manual ventilation the greater the amount that accumulates.
Conclusion: Significant amounts of CO_2 often in excess of 30 mmHg may be initially detected following oesophageal intubation in children as a result of bag-mask ventilation. Therefore presence of CO_2 to confirm correct ETT position is not totally reliable in children and the $ETCO_2$ trace should be confirmed over several ventilator cycles.

05AP07-6

Choice of anesthetic agents for pediatric anesthesia: a Belgian survey of current practice

Neuts A.[1], Ory J.-P.[1], Van de Velde M.[2], Dubois J.[1], Jamaer L.[1], Stessel B.[1]
[1]Jessa Hospital, Dept of Anaesthesiology, Hasselt, Belgium, [2]University Hospital Leuven, Dept of Anaesthesiology, Leuven, Belgium

Background and Goal of Study: A combination of sevoflurane and nitrous oxygen (N20) is widely used in pediatric practice. An intravenous (IV) access is not required prior to induction, the second gas effect facilitates induction and both are the least irritating volatile agents. Currently, the use of N20 is under debate and during recovery from sevoflurane anesthesia emergence agitation may occur.(1) Therefore, the purpose of this survey was to investigate choice of anesthesia for children in Belgian hospitals. Furthermore we analysed if use of N20 is lower in academic hospitals.
Materials and methods: In May 2015, the chairman of all 94 departments of anesthesia in Belgium were asked to participate in an online survey. Non-responders were reminded weekly (4 times) and contacted one last time by post. Descriptive statistics were used to summarize numeric responses.
A chi-square test for independence was used to test for possible association between use of N20 or air and type of hospital.
Results and discussion: During the period May - Oct 2015, 70 departments responded (74,5%). Anesthesia in children under 1 year old was performed in 68 of 70 responding hospitals and above
1 year old in all responding hospitals. IV induction is the standard in 1 hospital for children under
4 years old and in 11 hospitals for children over 4 years old (15%). For maintenance, all hospitals used inhalational agents. Use of N20 was highest during induction (34, 39 and 33 hospitals for respectively children aged <1 yr, 1 - 4 yr and >4 yr) and dropped during maintenance (respectively 27, 32 and 32 hospitals). N20 was used in only 2 of 7 responding academic hospitals (28%) and in 37 of 64 general hospitals (57%). However, at a significance level of $\alpha = .1$ no association could be shown: $X^2 = 2.476$ ($N = 71$), $p = .115$.
Conclusion: Inhalational induction and maintenance of anesthesia is still standard practice in Belgian pediatric anesthesia. However, to induce anesthesia, 15% of responding hospitals choose an IV agent in children above 4 years old. Use of N20 is highest during induction and in patients between 1 and 4 years old. Furthermore, N20 is used in only 28% of academic hospitals versus 57% of general hospitals. However, no statistical significance could be shown due to the small number of academic hospitals.
References:
1. Costi D, et al. Effects of sevoflurane versus other general anaesthesia on emergence agitation in children. *The Cochrane Database Syst Rev.* 2014 Sep 12;9:CD007084

05AP07-7

Sedation for paediatric magnetic resonance imaging using propofol with or without ketamine at induction - a prospective randomized double blinded study

Buehler K.P.[1], Makki M.[2], O`Gorman R.L.[2], Kellenberger C.[2], Weiss M.[1], Schmitz A.[1]
[1]University Children Hospital Zurich, Children's Research Center, Department of Anaesthesiology, Zurich, Switzerland, [2]University Children Hospital Zurich, Department of Radiology and Children's Research Center, Zurich, Switzerland

Introduction: Deep sedation using propofol has become a standard technique in children.This study aims to compare the clinical effects of adding ketamine at induction prior to propofol infusion in children undergoing elective magnetic resonance imaging (MRI) in a prospective double-blinded randomized trial.
Methods: After obtaining approval from the independent ethics committee, children aged from 3 months to 10 years scheduled as outpatients for elective MRI in deep sedation were included. Exclusion criteria were painful procedures during the same sedation and the need for tracheal intubation or ventilator support. Children were randomized into 2 groups, receiving either 1 mg/kg ketamine at induction, starting propofol infusion at a rate of 5 mg/kg/min (Group KP) or starting propofol infusion at a rate of 10 mg/kg/min without ketamine (Group P). Sevoflurane inhalation or intravenous propofol boluses were used at induction. Quality of induction, quality of immobilization during MRI, quality and time to full recovery (Adrete score = 10), postoperative nausea and vomiting (PONV), emergence delirium using the PAED score, vital sign parameters from the electronic patient data management system and behavioural changes using the posthospitalization behavioural questionnaire (PHBQ) at day 7, 14 and 28 after sedation were evaluated. Patients and parents as well as anaesthetists, MRI and post-sedation personnel involved were blinded. Data given as median (range).
Results: In total, 347 children aged 45(3-132) month, ASA I,II or III(141/188/18), weighing 15.6 (5.3-54) kg were included. The KP group showed significantly shorter recovery time (38 (22-65) vs. 54 (37-77) min,$p < 0.001$), better quality of induction, wake up behaviour and better cardiopulmonary stability but higher incidence of movement during imaging, predominantly after 45 min sedation time(14 vs.33), and PONV(0 vs.4). There were no significant differences in respiratory side effects, cardiovascular compromise, emergence delirium or behavioural changes until day 28 days between both groups.
Conclusion: Both sedation concepts proved reliable with few adverse events. Additional ketamine at induction showed advantages at induction and during recovery. However, movement disturbing MRI acquisition was more frequent. In clinical practice, however, adapting the propofol infusion rate can prevent movement during prolonged MRI examinations. PONV, although a rare complication, occurred more often after ketamine.

05AP07-8

Sedation as a unique technique for magnetic resonance imaging (MRI) in infants: is it possible?

Esquenazi Najman I.[1], Duarte Pimentel P.[2], Oriá Soares Kerbage N.[2], Soriano de Araujo C.[2], Moreira Petri F.[2], Pinho Mendes Pereira A.C.[2]
[1]National Cancer Institute, Dept of Anaesthesiology & Intensive Care, Rio de Janeiro, Brazil, [2]National Cancer Institute, Dept of Anaesthesiology, Rio de Janeiro, Brazil

Background: General anesthesia (GA) is the technique of choice for MRI in children, which is a frequent diagnostic step to define cancer staging and treatment options. Upper respiratory tract infection (URI) is a condition that generally postpones exams under general anesthesia, since complications such as laringospasm can occur. MRI procedures are usually performed outside operating room environment. Sedation seems to be a good and safe alternative for such cases.
Case report: A three-year-old, 15kg child diagnosed with retinoblastoma was submitted to preoperative skull and orbit MRI. Pre anesthetic evaluation revealed URI, which would prevent the procedure. As the exam could not be delayed, anesthesia was performed solely with sedation. It started with oral Midazolam 0.5mg/Kg as premedication 30 minutes prior to MRI execution. Clonidine 3μg/Kg was injected intravenous (IV), immediately after obtaining the venous access. The child fell asleep. While positioning and monitoring the child with capnography, pulse oximetry and blood pressure, a slight awaken-