

Review of postoperative nausea and vomiting in pediatric patients

Author(s): AK Reddy, MA Ehlers

Affiliation(s): Albany Medical Center, Albany, NY

Introduction: One of the most common postoperative complications in both children and adults is nausea and vomiting with a reported incidence of 20-75%¹. While most patients will not suffer from postoperative nausea and vomiting (PONV), studies show that emesis is patients' most undesirable complication from surgery with nausea being ranked fourth least desirable, after pain². It is also one of the leading causes of hospital admission following surgery. PONV may lead to increased morbidity from electrolyte imbalance, dehydration, wound dehiscence, venous hypertension and bleeding, esophageal rupture, and airway compromise³. Risk factors such as female sex, history of motion sickness or previous PONV, nonsmoking status, and intraoperative or postoperative use of opioids have been linked to PONV in adults⁴. However, incidence and risk factors for PONV in children remains less clear. We decided to investigate the incidence of postoperative nausea and vomiting in our teaching hospital (both residents and SRNAs) to determine if we are effectively diminishing the occurrence of this post-operative complication.

Methods: This retrospective study examined the incidence of nausea and vomiting in 100 consecutive children during their stay in the pediatric post-operative care unit during June and October of 2006. They ranged in age from 2 months to 18 years old; a total of 53 males and 47 females were studied. The mean weight of all children was 26 kilograms, with a range of 5 to 85 kilograms. Only patients going directly to an ICU from the operating room were excluded. Patients underwent various types of surgeries, including gastric, otolaryngologic, ocular, hernia repair, orchiopexy and orthopedic procedures.

Results: Only three cases of PONV were reported out of the 100 patients studied. Inhalational agents used included: sevoflurane (84 patients), isoflurane (60 patients), desflurane (9 patients) and nitrous oxide (43 patients). Propofol was administered to 29 patients. Intraoperative opioids were given to 73 patients, while 33 patients received opioids postoperatively. A total of 62 patients received anti-emetics intra-operatively and 7 post-operatively. Incidence of PONV varied based on type of surgery, occurring in this study with: gastric, hernia (umbilical) and orthopedic procedures.

Discussion: Three percent of patients in this study experienced PONV while in the post-operative care unit. Previously reported risk factors identified in these three patients included: type of surgery (3/3), intra-operative (3/3) or post-operative opioid use(1/3), use of nitrous oxide(1/3), time of day (1/3 early morning) and lack of anti-emetic administration (1/3). Identification of risk factors specific to pediatric patients may be able to further decrease the incidence of PONV. In this study population, the incidence of post-operative nausea and vomiting in pediatric patients appears to be well below the usual incidence.

Refs:

1. Goodarzi M, Matar MM, Shafa M et al., *Pediatric Anesthesia* 2006
2. Macario A, Weinger M, Carney S et al., *Anesth Analg* 1999
3. Gan TJ, *Anesth Analg* 2006
4. Gan TJ, *JAMA*. 2002