



Is postoperative nausea and vomiting still the big “little” problem?

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Postoperative nausea and vomiting (PONV) is usually defined as any nausea, retching, or vomiting occurring within the first 24–48 hours of surgery. PONV can be extremely distressing to patients and is one of the most common causes of patient dissatisfaction and discomfort after anesthesia. The average incidence of PONV after general anesthesia is about 30% in all post-surgical patients but up to 80% in high-risk patients despite advances in anesthetics and anesthesia techniques [1-3]. In addition, PONV is rated highly in preoperative surveys, as the clinical anesthesia outcome that the patient would most like to avoid [4]. Therefore it is not surprising that patients express a high willingness-to-pay (\$50–100) to avoid PONV [5,6]. While bleeding, wound dehiscence, pulmonary aspiration of gastric contents, esophageal perforation, and other serious complications associated with PONV are rare, nausea and vomiting is still an unpleasant, unwanted and all-too-common postoperative morbidity that can delay patient discharge from the post-anesthesia care unit, require expanded levels of nursing care and increase unanticipated overnight hospital admissions in outpatients.

The public now believes that anesthesia is extraordinarily safe from catastrophic outcomes, including major organ dysfunction or failure and even death. Therefore, many patients are more concerned about pain and PONV than surgical outcomes, such as whether the surgery would improve their condition. This is especially true for the majority of patients undergoing less invasive surgery. Moreover, minimally invasive surgery is now increasingly and routinely used across almost all surgical

specializations. An important aspect of the quality of anesthetic care is the satisfaction of the patient with their care.

Possible strategies to prevent the incidence of PONV include the prophylactic use of antiemetics such as dexamethasone or 5-HT₃ antagonists, and avoiding use of emetic drugs such as inhalational anesthetics or opioids. However, no drug is completely effective at preventing PONV. If we can avoid drugs that cause PONV, all the better.

The etiology of PONV remains unclear, but involves anesthetic, surgical and patient factors. Well-known risk factors are female gender, non-smoking status, a history of motion sickness or previous PONV, inhalational anesthetics, certain types of surgery, and opioid use [7]. Among the risk factors for PONV, the use of postoperative opioids is one of four major risk factors in the simplified risk-scoring system introduced by Apfel et al. [8].

In this month's *Korean Journal of Anesthesiology*, Lim et al. [9] report a study focusing on the effects of intraoperative opioid use on the incidence and severity of PONV and the effects of a single bolus administration of fentanyl during anesthesia induction versus intraoperative infusion of remifentanyl on PONV. In a previous randomized controlled trial in over 5000 patients, the use of a short-acting opioid, like remifentanyl, instead of fentanyl did not decrease the incidence of PONV [10]. However, in that study, patients who had been assigned to receive intraoperative remifentanyl were given 50 µg of morphine per kilogram or an equivalent opioid at the end of surgery. Therefore, the current study has meaningful results based on comparing only fentanyl versus remifentanyl itself, without the other factors that affect PONV. They demonstrated that a single bolus administration of fentanyl during anesthesia induction increased the incidence of PONV, while an intraoperative remifentanyl infusion did not affect the incidence and severity of PONV. These results should have a marked synergistic effect with antiemetic prophylaxis.

It should be kept in mind that even a single bolus administration of fentanyl during anesthesia induction can increase the incidence of PONV in high-risk patients.

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