Postoperative nausea and vomiting (PONV) is a long-standing, multi-factorial problem for anesthesia practitioners. (1) The incidence of PONV remains high despite the frequent use of prophylactic antiemetics (e.g., 5-HT3 antagonists, glucocorticoids, dopamine antagonists), shorter-acting anesthetics and analgesics (e.g., propofol, desflurane, remifentanil), and less invasive surgical techniques (e.g., laparoscopic procedures). Patient, anesthetic and surgical factors all contribute to the persistently frequent incidence of emetic symptoms in the postoperative period. (2) With the increasingly emphasis on earlier mobilization and discharge (“fast-tracking”) after both minor and major operations, postural hypotension and oral opioid containing analgesics are becoming more important contributors to PONV and post-discharge nausea and vomiting (PDNV). In a recent analysis of factors influencing postanesthesia recovery, Edler et al. (3) reported that the number of episodes of PONV contributes significantly to prolonging the patient’s length of stay in the hospital.

Use of antiemetic prophylaxis has been shown to improve patient satisfaction and speed of recovery compared to simply treating the symptoms when they occur in the postoperative period. (4) Therefore, antiemetic drugs are now commonly administered both at the start and/or the end of surgery to patients considered to be at increased risk of developing PONV. (5) In fact, combinations of antiemetic drugs are now routinely administered as part of a multimodal strategy for reducing postoperative emetic symptoms in “at risk” patient populations. (6) Apfel et al. (7) have developed a simplified scoring system which has favorable discriminating and calibrating properties for predicting an individual patient’s risk for developing PONV. (8) However, the Apfel risk scoring system appears to be more predictive of (<24 h) versus late (24–72 h) emetic symptoms. (9) A recent publication has also provided preliminary evidence to support the notion that the type of surgical procedure may also play an important role in determining the patient’s overall risk of developing PONV. (10) It is obvious from reviewing the literature that PONV has been far better studied than PDNV. (11) There is a pressing need for additional clinical studies evaluating the impact of antiemetic therapies on PDNV. Oral opioid-containing analgesics for postoperative pain management are a major factor contributing to the occurrence of nausea and vomiting following discharge from a hospital or ambulatory surgery facility. It is possible that the use of longer-acting antiemetics (e.g., transdermal scopolamine, palonosetron) may offer significant advantages over the commonly used antiemetics in preventing PDNV in the post-discharge recovery period. In a comparative study involving ondansetron and droperidol, transdermal scopolamine was found to be as effective as these popular generic antiemetics for prophylaxis in the early postoperative period even when applied 60-90 min prior to the start of surgery. (12)

We know from an earlier study by Scuderi et al. (13) using an aggressive approach involving intravenous anesthesia with propofol and minimal amounts of short-acting opioid analgesics, no nitrous oxide, no neuromuscular blocking or reversal drugs, aggressive IV hydration, triple prophylactic antiemetics (ondansetron, droperidol, and dexamethasone), and ketorolac for preventative analgesia, can effectively prevent emetic symptoms even after high outpatient gynecologic surgery procedures.

Thus, data from the peer-reviewed literature suggest that: (1) the efficacy of prophylactic antiemetic drug therapy is dependent on the patient’s overall risk of PONV; (2) the cost-benefit ratio for using inexpensive antiemetics (e.g., droperidol, dexamethasone, ondansetron) is significantly lower than using an expensive NK-1 antagonist (e.g., aprepitant [Amend]) and 5-HT3 antagonists (e.g., palonosetron [Aloxi]); (3) With the addition of each successive therapeutic intervention, the incremental antiemetic benefit diminishes. Finally, consideration should be given to routinely using equi-efficacious and less costly generic drugs (e.g., droperidol, ondansetron, dexamethasone, transdermal scopolamine) and devices (e.g., acupressure bands) as the first line of prophylaxis in the ongoing battle to effectively eliminate PONV. Other important considerations include the prevention of postoperative pain using non-opioid analgesics an the post-discharge period, and insuring adequate hydration as part of a multimodal approach during the perioperative period. (14)

In conclusion, a combined multimodal approach to preventing PONV will not only improve patient satisfaction with their overall surgical experience, but also lead to a more rapid resumption of their normal activities of daily living in the early postdischarge period. Although there are still additional etiologic factors, as well as prevention and treatment modalities, which need to be further investigated, it is time for all practitioners to begin routinely utilizing existing evidence in the peer-reviewed literature for preventing PONV in their clinical practices.
REFERENCES


