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The Incidence Of Early Stage Postoperative Nausea And Vomiting Following The Use Of Nitrous Oxide And Prophylactic Antiemetic Therapy: Implications For Clinical Practice

Abstract
Nitrous oxide ($N_2O$) is a volatile agent currently used during the induction and maintenance of general anesthesia. Since it’s discovery in 1786 by Dr. Priestly, it is the oldest volatile agent to find continued use in current practice (Kossick, 2014). In conjunction with its extensive history is the debate regarding its emetic properties. Numerous studies have investigated the effect of nitrous oxide to produce postoperative nausea and vomiting (PONV) with varying and often conflicting results. Generally speaking, nitrous oxide is theoretically an emetic and is believed to be associated with PONV (Tramer, Moore, & McQuay, 1996). This has caused many providers to limit the continued use of this agent in their anesthetic technique. The studies investigating this association have been largely inconclusive but nonetheless have significantly influenced the usage of nitrous oxide in current anesthesia practice. Furthermore, current standards of practice promote the utilization of prophylactic antiemetic therapy to combat the sustained incidence of PONV following anesthesia and surgery. Considering the current standards regarding antiemetic therapy, evidence suggests that the combination with $N_2O$ will decrease the incidence of PONV.