

## CHAPTER 1

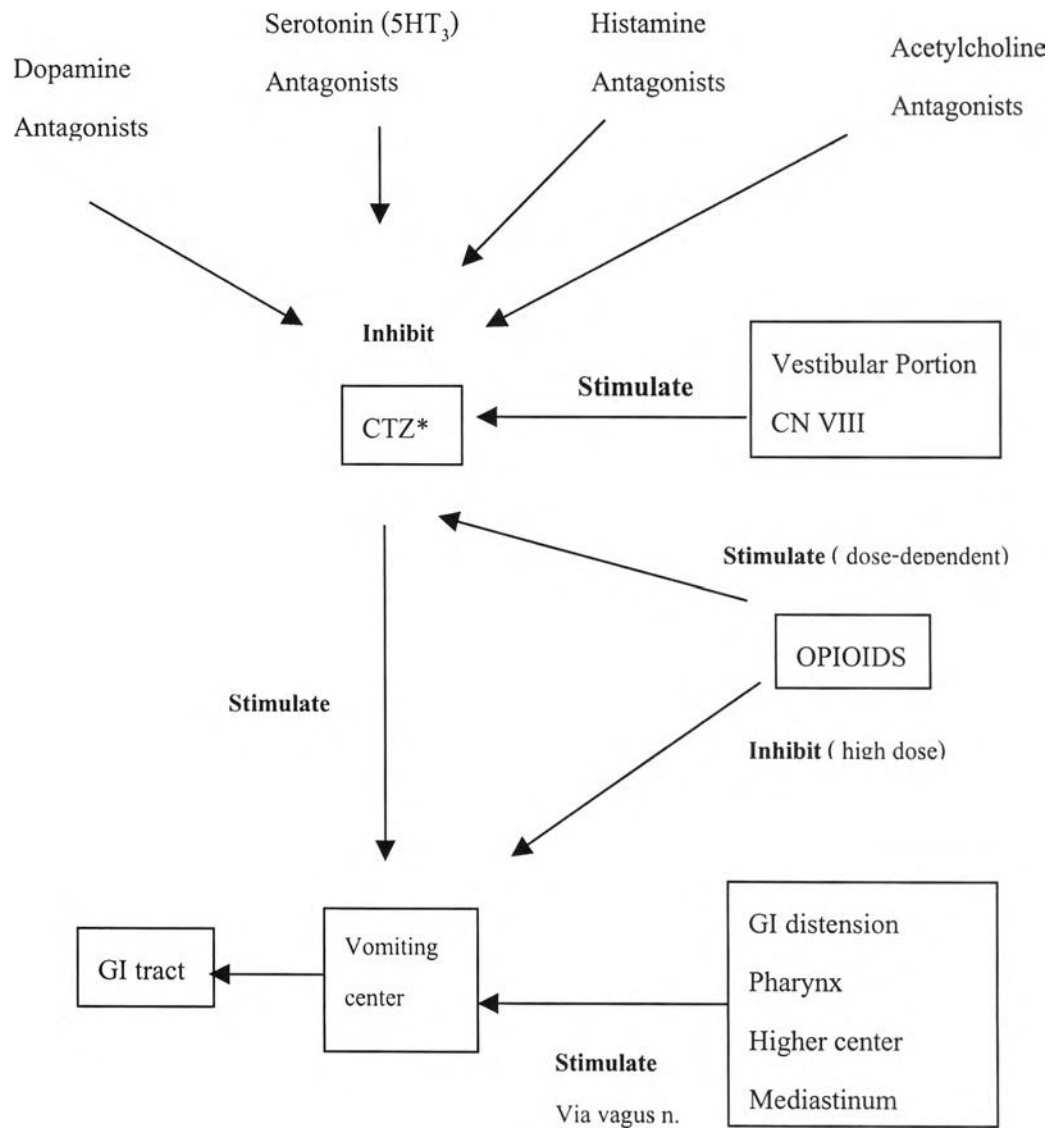
### INTRODUCTION

#### **Rationale and background**

As during the last decade intrathecal anesthesia for lower extremity surgery has gained popularity, it was shown that postoperative analgesia could be obtained while adding an opioid to the spinally injected local anesthesia. Doses of 0.1-0.2 mg morphine are most commonly used and may provide analgesia up to 24 hours. However, postoperative nausea and vomiting (PONV), a common side effect of intrathecal morphine was reported about 45-75 % of arthroplasty patients(1). Factors associated with PONV include history of motion sickness, history of PONV, type of surgery such as eye surgery, intra-abdominal surgery and gynecological surgery(2). From the patient's perspective, PONV is undoubtedly distressing; it interferes with patient's comfort. Surgical patients. There are many trials reporting various anti-emetic interventions in prevention and treatment of PONV. However, there has been no real reduction in PONV incidence, which still persist at approximately 30 % , despite the continued introduction of new anti-emetics(4). On the other hand, there is no "gold standard" anti-emetic intervention for PONV prophylaxis(5). The physiology and neuropharmacology of opioid-induced nausea and vomiting are complex as figure I (6).

Ginger ( *Zingiber officinale* ) has been used by Chinese people for gastrointestinal symptoms including nausea and vomiting. German and European monographs on ginger are available (7, 8) and both list nausea/vomiting as indication. Moreover, the US pharmacopoeia has approved ginger and powdered ginger

monographs for inclusion in the National Formulary(9). Recently, it has been shown to be effective in prevention of sea-sickness(10), treatment of hyperemesis gravidarum(11) and reduction of chemotherapy-induced nausea(12). Anti-nausea and anti-emetic activities of ginger may be on CNS and direct gastrointestinal system, possibly as antiHT<sub>3</sub>(13-16).



\*CTZ = chemotactic trigger zone

**Figure 1 Pharmacology of nausea and vomiting**

Therefore, ginger may be effective in PONV, but the clinical data to date are insufficient to draw firm conclusion(17). This study aims to compare PONV prophylactic effect of ginger to that of placebo.