



شبكة المعلومات الجامعية
التوثيق الإلكتروني والميكروفيلم

بسم الله الرحمن الرحيم



MONA MAGHRABY



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A Comparative Study of Using Ondansetron with Dexamethasone or Ondansetron with Haloperidol in Prophylaxis Against Post- Operative Nausea and Vomiting after Elective Laparoscopic Abdominal Surgeries

Thesis

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INTRODUCTION

Laparoscopic surgery is associated with a remarkably high risk of post-operative nausea and vomiting. In addition to basic factors related to type of patient, anesthesia and intensity of post-operative pain, the reasons for this high rate of PONV include mechanical factors (such as pressure on the stomach and gut caused by the pneumoperitoneum), neural factors (such as vagal reflexes elicited by irritation of parasympathetic nerve endings in the abdomen), and chemical factors (which include speculative considerations regarding a possible influence of CO₂ on PONV) (*Ku and Ong, 2003*).

Postoperative nausea and vomiting are usually self-limiting but if persistent or severe, can cause medical complications such as dehydration, electrolyte imbalance and delay in patient's discharge. The overall incidence of PONV, a determinant of patient outcome and satisfaction, has been reported to vary from 10% to 79% (*Gan et al.,2003*).

Antiemetic medications such as droperidol, promethazine, dexamethasone, metoclopramide and ondansetron have been studied for their efficacy in preventing PONV. Failure of monotherapy with the mentioned agents has been reported to be significant, and a combination of two antiemetic drugs, with different sites of action, has been suggested to provide a higher efficacy with less adverse effects (*Kranke and Eberhart, 2011*).

Haloperidol, a butyrophenone, exerts its antiemetic action through direct dopaminergic (D₂ receptors) inhibition in the chemoreceptor trigger zone and the solitary tract nucleus (*White, 2002*). Ondansetron is a selective serotonin receptor

antagonist (5-HT₃ receptors) with both central (chemoreceptor trigger zone and solitary tract nucleus) and peripheral (stomach and small bowel) actions (**Greco et al., 2008**). Dexamethasone acts on glucocorticoid receptors in the nucleus of solitary tract and area postrema. Also, it acts by central inhibition of prostaglandin synthesis, reduction of central serotonin activity and by its anti-inflammatory effect that may reduce the inflammation triggered by afferent stimulation of parasympathetic nervous system to the vomiting center (**Tzeng et al., 2000**).

Combining haloperidol and ondansetron generally improves efficacy, although it may have only a weak benefit or no benefit at all. Ondansetron is thought to suppress nausea less effectively than vomiting and adding droperidol to ondansetron may reduce nausea (**White et al., 2005**).

Conversely dexamethasone with ondansetron is an attractive combination because ondansetron is most effective against early vomiting whereas dexamethasone is effective against both early and late (2–24 h) nausea and vomiting; its late efficacy being pronounced (**Henzi et al., 2000; Tramer, 2001**).