The intraperitoneal ondansetron for postoperative pain management following laparoscopic cholecystectomy: A proof-of-concept, double-blind, placebo-controlled trial

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Abstract

Background: Pain after laparoscopic cholecystectomy remains a major challenge. Ondansetron blocks sodium channels and may have local anesthetic properties.
Aims: To investigate the effect of intraperitoneal administration of ondansetron for postoperative pain management as an adjuvant to intravenous acetaminophen in patients undergoing laparoscopic cholecystectomy.
Methods: Patients scheduled for elective laparoscopic cholecystectomy were randomized into two groups (n = 25 each) to receive either intraperitoneal ondansetron or saline injected in the gall bladder bed at the end of the procedure. The primary outcome was the difference in pain from baseline to 24-h post-operative assessed by comparing the area under the curve of visual analog score between the two groups.
Results: The derived area under response curve of visual analog scores in the ondansetron group (735.8 Ñ 418.3) was 33.97% lower than (p = 0.005) that calculated for the control group (1114.4 Ñ 423.9). The need for rescue analgesia was significantly lower in the ondansetron (16%) versus in the control group (54.17%) (p = 0.005), indicating better pain control. The correlation between the time for unassisted mobilization and the area under response curve of visual analog scores signified the positive analgesic influence of ondansetron (rs =0.315, p = 0.028). The frequency of nausea and vomiting was significantly lower in patients who received ondansetron than that reported in the control group (p = 0.023 (8 h), and 0.016 (24 h) respectively).
Conclusions: The added positive impact of ondansetron on postoperative pain control alongside its anti-emetic effect made it a unique novel option for patients undergoing laparoscopic cholecystectomy.
Keywords: 5-HT(3) antagonists; Laparoscopic cholecystectomy; Ondansetron; Pain.

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