

# **A Comparative Analysis of Dexamethasone versus Ondansetron for Prophylaxis of Postoperative Nausea and Vomiting in Laparoscopic Surgery: A Rwandan Clinical Trial**

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l, e, ,, O, l, i, v, i, e, r, T, s, h, i, b, a, n, g, u

DOI: <https://doi.org/10.5281/zenodo.18532805>

## | Abstract

Postoperative nausea and vomiting (PONV) is a frequent complication after laparoscopic surgery, adversely affecting patient recovery. Identifying effective prophylactic antiemetics is particularly important in resource-limited healthcare environments. This study compared the efficacy of a single preoperative dose of dexamethasone with that of ondansetron for preventing PONV in adults undergoing elective laparoscopic surgery. A prospective, double-blind, randomised controlled trial was conducted at a tertiary hospital in Kigali, Rwanda. One hundred and twenty patients were randomly assigned to receive intravenous dexamethasone (8 mg) or ondansetron (4 mg) prior to anaesthetic induction. Standardised anaesthetic and surgical protocols were employed. The primary outcome was the incidence of PONV during the first 24 postoperative hours. The incidence of PONV within 24 hours was significantly lower in the dexamethasone group (25%) than in the ondansetron group (45%), representing a relative risk reduction of 44%. Patients who received dexamethasone also experienced less severe nausea and required fewer rescue antiemetics. Preoperative dexamethasone was more effective than ondansetron for prophylaxis against PONV in this cohort of patients undergoing laparoscopic surgery. Dexamethasone should be considered a first-line agent for PONV prophylaxis in similar surgical populations within comparable settings, given its superior efficacy, potential cost-

effectiveness, and longer duration of action. Postoperative nausea and vomiting, PONV prophylaxis, dexamethasone, ondansetron, laparoscopic surgery, Rwanda, clinical trial. This trial provides locally relevant evidence to guide antiemetic practice in a sub-Saharan African surgical context, supporting the use of a low-cost, effective intervention.

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