

# Comparison of the effect of adding dexmedetomidine and fentanyl to bupivacaine on nausea and vomiting in patients undergoing lower extremity orthopedic surgery with spinal anesthesia: A double-blind randomized clinical trial

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## Abstract

**Introduction:** Nausea and vomiting after surgery is a relatively common complication that despite advances in prevention and treatment is still the most problematic side effect observed in the recovery room and after surgery. The study aimed to evaluate the effect of adding dexmedetomidine and fentanyl to bupivacaine on nausea and vomiting in patients undergoing orthopedic lower extremity surgery with spinal anesthesia. **Materials and Methods:** This randomized double-blind clinical trial study was performed on 40 patients aged 18 to 50 years with anesthesia classes (ASA I, II) who were candidates for lower limb orthopedic surgery (femur). Patients were randomly divided into two groups: 1: (12.5 mg bupivacaine (2.5 ccs) and 10 mg fentanyl) and group 2: (12.5 µg bupivacaine and 5 µg dexmedetomidine). At recovery times, 6, 12, and 24 hours after surgery Patients' nausea and vomiting were assessed. **Results:** The results of the Chi-square test showed that there was a significant difference between the groups of bupivacaine-dexmedetomidine and bupivacaine-fentanyl in terms of nausea and vomiting only 6 hours after surgery ( $P=0.034$ ). At 6 hours postoperatively, the frequency of nausea and vomiting in patients in the bupivacaine-fentanyl group (50%) was higher than in the bupivacaine-dexmedetomidine group (25%). **Conclusion:** Although in most minutes of the study, there was no significant difference between the two groups in terms of vomiting nausea, at 6 hours after surgery, there was a significant difference between the bupivacaine-dexmedetomidine and bupivacaine-fentanyl groups in terms of nausea. In addition to its analgesic effects, dexmedetomidine appears to prevent nausea and vomiting in patients after surgery.

**Keywords:** Bupivacaine, Dexmedetomidine, Fentanyl, Spinal Anesthesia, Nausea, Vomiting, Orthopedics