

**COMPARATIVE STUDY BETWEEN THE EFFECT OF  
DEXMEDITOMEDINE VERSUS NALBUPHINE AS AN  
ADJUVANT TO BUPIVACAINE IN PARAVERTEBRAL  
BLOCK COMBINED WITH GENERAL ANATHESIA BY  
USING SPONTANEOUS VENTILATION  
IN BREAST CANCER SURGERY**

BY

**Mohammed Omar Mostafa**

Thesis Submitted in Partial fulfillment

Of

The requirements for the degree of

**Master of Science**

In

**Anesthesia**

Department Of Anesthesiology

Faculty of medicine, Fayoum

**FAYOUM UNIVERSITY**

**2016**

**COMPARATIVE STUDY BETWEEN THE EFFECT OF  
DEXMEDITOMEDINE VERSUS NALBUPHINE AS AN  
ADJUVANT TO BUPIVACAINE IN PARAVERTEBRAL  
BLOCK COMBINED WITH GENERAL ANATHESIA BY  
USING SPONTANEOUS VENTILATION  
IN BREAST CANCER SURGERY**

BY

**Mohammed Omar Mostafa**

M.B.B.CH/M.Sc

Supervised by

**Prof. Dr. Mostafa Mohammed El-Said El-Hamamsy**

Prof. of Anesthesiology

Faculty of medicine, Fayoum University

**Dr. Joseph Makram Botros**

Lecturer of Anesthesiology

Faculty of medicine, Fayoum University

**Dr. Atef Mohammed Sayed**

Lecturer of Anesthesiology

Faculty of medicine, Fayoum

**FAYOUM UNIVERSITY**

**2016**

## Abstract

---

### Background and Objective

Breast cancer is the commonest cancer in women worldwide. Many patients are frequently admitted to the operating theaters for mastectomies. Thoracic paravertebral block (PVB) is increasingly used as an effective means for post-operative pain relief. The present study aimed at evaluating the effectiveness and safety of dexmedetomidine and nalbuphine as an adjuvant to bupivacaine local anesthetic in thoracic paravertebral block in breast cancer surgeries.

### Methods

A total of 60 female patients aged 18 to 78 were included in the study, and ASA I, II, III were scheduled for mastectomy. These patients were unsystematically assigned into three 20-member groups: group PB received bupivacaine (0.3 mL/kg) + 1 mL (0.9% sodium chloride) normal saline; group PBD received bupivacaine (0.3 mL/kg) + dexmedetomidine 1 µg/kg; and Group PBN received bupivacaine (0.3 mL/kg) and 10 mg (1 mL) nalbuphine. Demographic data, intraoperative SPO<sub>2</sub>, ETCO<sub>2</sub>, HR, SBP and DBP, pain scores (at rest and movement), and sedation scores were recorded every 30 minutes during the initial 2 hours and 4, 8, 24, and 48 hours from T0. Also, postoperative tramadol consumption, the time to the first analgesic request, and any complications were also recorded.

### Results

There were no statistically significant differences among the three groups regarding demographic data, SPO<sub>2</sub>, ETCO<sub>2</sub>, HR, SBP and DBP intraoperatively. Moreover, no significant difference was found in HR, SBP and DBP postoperatively. Postoperative pain scores were significantly higher in group BP, whether at rest or movement. The sedation was significantly higher in PBD group in the first 12 hours postoperatively. There was a significantly lower postoperative tramadol consumption in PBN group and a significantly longer time to the first analgesic request than other groups. No complications were reported in any group.

### Conclusions

Addition of nalbuphine 10 mg as an adjuvant to bupivacaine local anesthetic in PVB improved the quality of the block and decreased postoperative analgesic requirements than the bupivacaine only group and dexmedetomidine and bupivacaine group. However, adding dexmedetomidine to bupivacaine increased the time to the first analgesic request and more sedation than bupivacaine and bupivacaine and nalbuphine.

**Keywords:** Dexmedetomidine, Nalbuphine, Paravertebral Block, Postoperative Pain