ISSN: 2349-2678

Contents lists available at www.ijpba.in

International Journal of Pharmaceutical and Biological Science Archive

Index Copernicus Value 2017: 71.80

Volume 5 Issue 1; January-February; 2017; Page No. 61-63

RESEARCH ARTICLE

COMPARISON OF SUPINE VERSUS SEMI-FOWLER'S POSITION DURING EXTUBATION AND RECOVERY IN THE POST-ANESTHESIA CARE UNIT FOLLOWING ABDOMINAL SURGERIES

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ABSTRACT:

This study investigates the effects of patient positioning (supine vs. semi-Fowler's) during extubation and in the post-anesthesia care unit (PACU) on recovery outcomes following abdominal surgeries. The choice of position may influence respiratory function, comfort, and the incidence of complications.

We conducted a randomized controlled trial involving 100 adult patients undergoing elective abdominal surgery. Participants were assigned to either the supine group or the semi-Fowler's group during extubation and recovery. Primary outcomes included respiratory rate, oxygen saturation (SpO2), and the occurrence of complications such as airway obstruction and desaturation. Secondary outcomes involved patient comfort and the need for supplemental oxygen.

Results indicated that patients in the semi-Fowler's position exhibited improved oxygen saturation levels and reduced respiratory rates compared to those in the supine position. Additionally, the semi-Fowler's group reported higher comfort scores and a lower incidence of airway complications.

In conclusion, positioning patients in the semi-Fowler's position during extubation and recovery in the PACU significantly enhances respiratory function and comfort, suggesting its advantages for postoperative care following abdominal surgeries.

Keywords: extubation, semi-Fowler's position, supine position, post-anesthesia care unit, abdominal surgeries

Introduction

The management of patients in the post-anesthesia care unit (PACU) is critical for ensuring optimal recovery and minimizing complications following surgery. One aspect that has garnered attention is the influence of patient positioning during extubation and recovery, particularly in abdominal surgeries where respiratory function can be compromised due to factors such as abdominal distension and anesthesia effects (1, 2).

Traditionally, patients have been extubated in the supine position; however, this may not always be the most beneficial position for ensuring adequate respiratory function. The semi-Fowler's position, where the patient is placed at a 30 to 45-degree angle, has been suggested to improve lung mechanics, facilitate diaphragmatic function, and enhance oxygenation (3, 4). This position may also help to reduce the risk of airway obstruction and minimize the effects of post-operative nausea and vomiting, which are common after abdominal surgeries (5).

Research on the impact of patient positioning during recovery is limited. Several studies have shown that the semi-Fowler's position can lead to better pulmonary function, particularly in patients with underlying respiratory conditions (6, 7). Furthermore, optimal positioning may contribute to enhanced comfort, decreased

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anxiety, and improved overall satisfaction in the PACU (8, 9).

Despite these potential benefits, clinical practices often remain conservative, with the supine position being the standard during extubation and recovery. Given the growing evidence supporting the advantages of semi-Fowler's positioning, this study aims to compare the outcomes associated with these two positions during extubation and recovery following abdominal surgeries.

This study will assess the impact of patient positioning on respiratory parameters, incidence of complications, and patient comfort in the PACU. By establishing the benefits of the semi-Fowler's position, we aim to contribute to evidence-based practices in postoperative care and improve patient outcomes.

Aim and Objectives

Aim: To compare the effects of supine versus semi-Fowler's positioning during extubation and recovery in the PACU on patient outcomes following abdominal surgeries.

Objectives:

1. To evaluate the respiratory rate and oxygen saturation in patients in different positions during recovery.
2. To assess the incidence of complications and patient comfort levels in the PACU based on positioning.

Materials and Methods

This randomized controlled trial involved 100 adult patients aged 18-65 years undergoing elective abdominal surgeries. Inclusion criteria encompassed ASA physical status I-II and the ability to provide informed consent. Exclusion criteria included patients with known respiratory conditions, obesity (BMI > 30), or contraindications to the study positions.

Patients were randomly assigned to either the supine group (n=50) or the semi-Fowler's group (n=50) during extubation and subsequent recovery in the PACU. Respiratory rate, oxygen saturation (SpO2), and the occurrence of complications such as airway obstruction were monitored and recorded. Additionally, patient comfort was assessed using a visual analog scale (VAS) immediately upon arrival in the PACU and prior to discharge.

Results

Table 1: Respiratory Parameters and Incidence of Complications

Parameter	Supine Group (n=50)	Semi-Fowler's Group (n=50)
Respiratory Rate (breaths/min)	22.3 ± 4.1	18.7 ± 3.6
SpO2 (%)	92.0 ± 3.5	96.5 ± 2.2
Airway Obstruction (%)	10 (20%)	2 (4%)

Table 2: Patient Comfort Scores

Group	Comfort Score (VAS)
Supine	4.2 ± 1.0
Semi-Fowler's	7.8 ± 1.3

Results showed that the semi-Fowler's group had a significantly lower respiratory rate and higher SpO2 levels compared to the supine group ($p < 0.01$). The incidence of airway obstruction was notably lower in the semi-Fowler's group. Additionally, patient comfort scores were significantly higher in the semi-Fowler's group ($p < 0.01$).

Discussion

This study demonstrates that positioning patients in the semi-Fowler's position during extubation and recovery in the PACU can significantly enhance respiratory function and overall comfort. Patients in the semi-Fowler's position exhibited lower respiratory rates and higher oxygen saturation levels, which may be attributed to improved lung expansion and diaphragmatic movement. This aligns with

previous research indicating that elevated positions facilitate better ventilation and gas exchange (10, 11).

The reduced incidence of airway obstruction in the semi-Fowler's group is also noteworthy. Postoperative airway obstruction is a common complication that can lead to significant morbidity, and positioning can play a critical role in mitigating this risk (12, 13). The increased comfort scores further support the notion that semi-Fowler's positioning can enhance patient satisfaction during the recovery phase, which is essential for overall postoperative care (14, 15).

While the results are promising, there are limitations to this study, including a relatively small sample size and the single-institution design. Future research with larger, multicenter trials could further validate these findings and contribute to establishing guidelines for optimal positioning in the PACU.

In conclusion, the semi-Fowler's position offers clear advantages over the supine position during extubation and recovery following abdominal surgeries. By adopting this practice, healthcare providers can potentially improve patient outcomes, enhance comfort, and reduce complications in the PACU.

Conclusion

This study highlights the benefits of the semi-Fowler's position during extubation and recovery in the PACU for patients undergoing abdominal surgeries. Improved respiratory function, reduced airway obstruction, and enhanced patient comfort were significant findings associated with this positioning strategy. Implementing the semi-Fowler's position in clinical practice could lead to better postoperative care and patient satisfaction.

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