

Providing coffee in the PACU: Impact on postoperative nausea and vomiting, patient satisfaction, and length of stay

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Abstract

Aim: The purpose of the research study was to determine if providing coffee to patients postoperatively will impact postoperative nausea and vomiting (PONV), patient satisfaction, and length of stay in the post-anesthesia care unit (PACU).

Methods: A randomized, non-blinded, controlled study was conducted. Adult outpatient surgical patients were randomized either to receive coffee or to not receive coffee in the PACU.

Results: A total of 178 patients were enrolled in the study. There was no significant difference in occurrence of PONV (5.6% vs 11%), patient

Keywords: coffee, PACU, patient satisfaction, length of stay.

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Acknowledgements: The authors would like to thank our study participants, team members who assisted with the study, leadership team, IRB, and our nurse researcher for their help and commitment to this research study.

satisfaction (M=9.9/10 vs. 9.8/10), or length of stay (M=82 minutes vs. 76 minutes) between patients who received coffee in the PACU and patients who did not receive coffee.

Conclusion: Providing coffee did not result in any negative events, didn't increase length of stay or increase postoperative nausea and vomiting. Our study found that coffee can be safely provided to patients in the PACU following outpatient surgery.

Introduction

Patients who arrive at a minimally invasive surgery center are required to be fasting. Anecdotally, nurses noticed that many patients made statements about the most difficult thing with complying with the fasting requirement was not having their morning coffee. Post-anesthesia care unit (PACU) nurses wondered if patients who self-identified as coffee drinkers could safely be provided coffee in the PACU to increase their patient satisfaction. Additionally, they wondered if providing coffee would be tolerated after surgery and wouldn't result in an increase in postoperative nausea and vomiting (PONV) and a longer length of stay (LOS) in the PACU.

After performing a thorough review of the literature, no studies were found that examined whether there are benefits of drinking coffee for post-operative patients. There have been a few studies that have demonstrated a benefit of three times daily coffee consumption following abdominal surgeries. In a study of 80 patients undergoing elective open or laparoscopic colectomy, Muller and colleagues (1) found that patients who consumed 100mL of coffee three times daily, compared to patients assigned to consume 100mL of water three times daily, had a significantly shorter time to first bowel movement. Similarly, Gungorduk and colleagues (2) studied 114 patients who were undergoing total abdominal hysterectomy and systematic para-aortic lymphadenectomy and found that compared to a group assigned to drink water, those patients assigned to consume coffee 3 times daily postoperatively, had a shorter time to bowel motility and ability to tolerate food. While these studies demonstrate that coffee consumption was tolerated after surgery, they do not provide evidence about the effectiveness of coffee consumption on length of stay and/or postoperative nausea and vomiting in the PACU.

Theoretically, it makes sense that coffee consumption would be associated with positive outcomes following surgery and anesthesia because it is associated with increased mental alertness and wakefulness (3). Additionally, Warner and colleagues (4) state that

murine models have demonstrated an enhanced speed of recovery from general anesthesia with coffee consumption. Steinbrook and colleagues (5) studied the impact of intravenous caffeine administered preoperatively to prevent PONV. The researchers only enrolled patients at moderate or high risk for PONV and found that the patients administered IV caffeine had a higher frequency of postoperative nausea. Warner's team then conducted a study examining the association between caffeine administration and changes in sedation scores among 151 heavily sedated patients in a PACU. Following administration of IV caffeine, sedation scores decreased, and no adverse respiratory events were noted. Warner and colleagues' study (2018) provides preliminary evidence that coffee consumption may increase speed of recovery. Once again, no studies have examined whether providing coffee by mouth to patients postoperatively would impact patient satisfaction and length of stay in the PACU without impacting rates of PONV. The current study sought to address this gap in the literature.

Methods

The study took place in two outpatient minimally invasive surgery centers. The first unit consisted of 3 operating rooms and 7 postoperative recovery bays. The second unit consisted of 4 operating rooms and 7 postoperative recovery bays. The team members on these units provide care for patients undergoing minimally invasive outpatient procedures including (but not limited to) Herniorrhaphy Repairs, Laparoscopic Cholecystectomies, Lipoma Removals, Hysteroscopies, Uterine Ablations, Bladder Slings, Female Sterilization, Breast Reductions and Augmentations, and other Plastic Surgery. There are approximately 10-20 surgeries performed in each of these settings daily.

A randomized, non-blinded, controlled study was conducted among adult outpatient surgical patients who reported that they consumed at least one cup of coffee a day for at least five days a week. Subjects

were excluded from the study if they had a history of PONV, pre-existing cardiac arrhythmias, history of seizure disorder, or were pregnant. Subjects were randomized either to receive coffee or not receive coffee while in the PACU. If patients experienced PONV in the PACU before coffee consumption, they were removed from the study and not offered coffee.

Patients randomized to receive coffee were offered 200mL of coffee in a Styrofoam cup at a temperature of 125 degrees Fahrenheit or less once the patient's gag reflex has been restored following their procedure. Patients randomized to not receive coffee were offered other beverages including water, coke, diet coke, sprite, diet ginger ale, diet ginger ale, apple juice, and cranberry juice. Data collected included the volume of coffee or other beverage consumed, patient satisfaction, whether patient experienced PONV, and patient's LOS in the PACU.

Patient satisfaction was measured by asking each patient to rate their satisfaction with their visit from a scale of 0 (very unsatisfied) to 10 (very satisfied). Length of stay was calculated by subtracting the time of PACU discharge from the time that the patient arrived in the PACU and was reported in minutes. Finally, PONV was measured by two questions to the nurse caring for the patient in the PACU – did the patient report postoperative nausea? Did the patient experience postoperative vomiting?

To compare patient satisfaction between the two groups of patients, an independent samples t-test was used. To evaluate the difference in length of stay, an independent samples t-test was used. Finally, to evaluate the difference in frequency of PONV between groups, a Chi Square test was used. A level of significance of 0.05 was used in all analyses.

Results

A total of 178 patients were enrolled in the study with half being randomized to receive coffee in the PACU and half were randomized not to receive coffee in the PACU. Eleven of the 89 patients assigned to receive coffee in the PACU did not consume the coffee. Eight declined wanting the coffee and three were not offered coffee because they experienced PONV before offered a drink. These eleven patients were removed from the analysis resulting in 78 patients in the intervention group and 89 patients in the control group.

There was no significant difference in patient satisfaction among patients who drank the coffee ($M=9.9/10$) and patients who were not provided coffee ($M=9.8/10$), $t(165) = 1.02$, $p=0.15$. There was no significant difference in mean length of PACU stay among patients who drank the coffee ($M=78$ minutes) and patients who were not provided coffee ($M=76$ minutes), $t(165) = 0.41$, $p=0.34$. Finally, there was no significant difference in occurrence of PONV among patients who drank the coffee (3.8%) and patients who were not provided coffee (11%), $X^2(1) = 3.16$, $p=0.08$.

Discussion

This was the first study to examine the effect of providing coffee to patients in the PACU. Similar to the Muller et al study (1) and the Gungorduk study (2), the current study found that coffee consumption was tolerated by patients postoperatively. Unlike the Steinbrook study (5) which reported an increase in postoperative nausea after the administration of IV caffeine, the current study did not find an increase in postoperative nausea following coffee consumption.

We anticipated an increase in patient satisfaction when patients were provided coffee, but this was not found in the data. Possibly, the high satisfaction ratings among both groups of patients made finding a statistically significant difference difficult. While we did not find an increase in patient satisfaction or decrease in length of stay, we also found no increase in PONV and no adverse events among patients who were provided coffee. The current study found that coffee could be safely provided to patients in the PACU. This finding has implications for nursing practice in the PACU in that nurses now have evidence to support offering coffee to postoperative patients who request it.

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