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ORIGINAL ARTICLE

A comparative analysis of Morphine versus fentanyl for postoperative analgesia after ambulatory surgical procedures

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ABSTRACT:
Background: Lower abdominal pain may depend on the extent of intraperitoneal manipulation during diagnostic laparoscopy. The present study was conducted to compare morphine versus fentanyl for postoperative analgesia after ambulatory surgical procedures. **Materials & Methods:** 50 patients undergoing ambulatory surgery of both genderswere divided into 2 groups of 25. Group I patients received 1 mg/ml morphine and group II patients received 1.5 µg/kg IV fentanyl. Anesthetic duration, type of operation performed and visual analog score was recorded **Results:** Group I had 15 males and 10 females and group II had 14 males and 11 females. The mean age in group I was 34.6 years and in group II was 37.2 years, weight was 72.5 kgs in group I and 74.4 kgs in group II. Anesthetic duration was 60.2 minutes in group I and 68.7 minutes in group II. Operation performed was arthroscopy in 12 in group I and 8 in group II, elbow surgery was performed in 7 in group I and 9 in group II and shoulder surgery in 6 in group I and 8 in group II. The mean VAS in group I was 3.5 and in group II was 6.2. The difference was significant (P< 0.05). Side effects were nausea/vomiting seen in 10 in group I and 8 in group II, drowsiness 8 in group I and 5 in group II and dizziness 4 in group I and 1 in group II. The difference was significant (P< 0.05). **Conclusion:** Authors found that Morphine produced a better quality of post operative analgesia as compared to fentanyl.
Key words: fentanyl, post operative analgesia, Morphine

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INTRODUCTION

Lower abdominal pain may depend on the extent of intraperitoneal manipulation during diagnostic laparoscopy. Sterilization operations cause ischemia or damage to the fallopian tubes and are generally more painful than simple diagnostic procedures, with clips generally causing less pain than other techniques to occlude the tubes.[1] Upper abdominal, shoulder tip, and postural high back pain after laparoscopy are likely to be caused by gas retained in the peritoneal cavity. Carbon dioxide is usually used to expand the abdomen to allow surgical visualization. Although it is a soluble gas in comparison to oxygen and nitrogen, it can take up to two days to be absorbed from the peritoneal cavity.[2]

Pain from the residual gas is of delayed onset and may present once the patient has gone home. Pain in the immediate postoperative period often requires opiates. Alternatives, such as nonsteroidal anti-inflammatory drugs or local anesthetic techniques, may be used, but these are not always possible for every patient or procedure. Opiates will therefore continue to be an important part of the armamentarium available to provide rapid control of severe postoperative pain.[3]

Morphine and fentanyl are widely used in ambulatory patients to provide analgesia during Phase I recovery in the post anesthesia care unit.[4] As fentanyl has a faster onset time, its use may provide more rapid control of pain and avoid unnecessary extra does which may be administered when a drug of slower onset is used in small incremental doses titrated to pain.[5] The present study was conducted to compare morphine versus fentanyl for postoperative analgesia after ambulatory surgical procedures.

MATERIALS & METHODS

The present consisted of 50 patients of ASA physical status I and II age ranged 18- 50 years of age undergoing ambulatory surgery of both genders. All gave their written consent to participate in the study.

Data such as name, age, gender etc. was recorded. Patients were divided into 2 groups of 25. Group I patients received 1 mg/ml morphine and group II patients received 1.5 µg/kg IV fentanyl. The drugs were administered in equipotent doses in the post anesthesia care unit (PACU) and were titrated against pain scores until a visual analog score. Type of operation performed was also recorded.Data thus

obtained were subjected to statistical analysis. P value < 0.05 was considered significant.

RESULTS

Table I: Distribution of patients

Groups	Group I	Group II
Drug	1 mg/ml morphine	1.5 µg/kg IV fentanyl
M:F	15:10	14:11

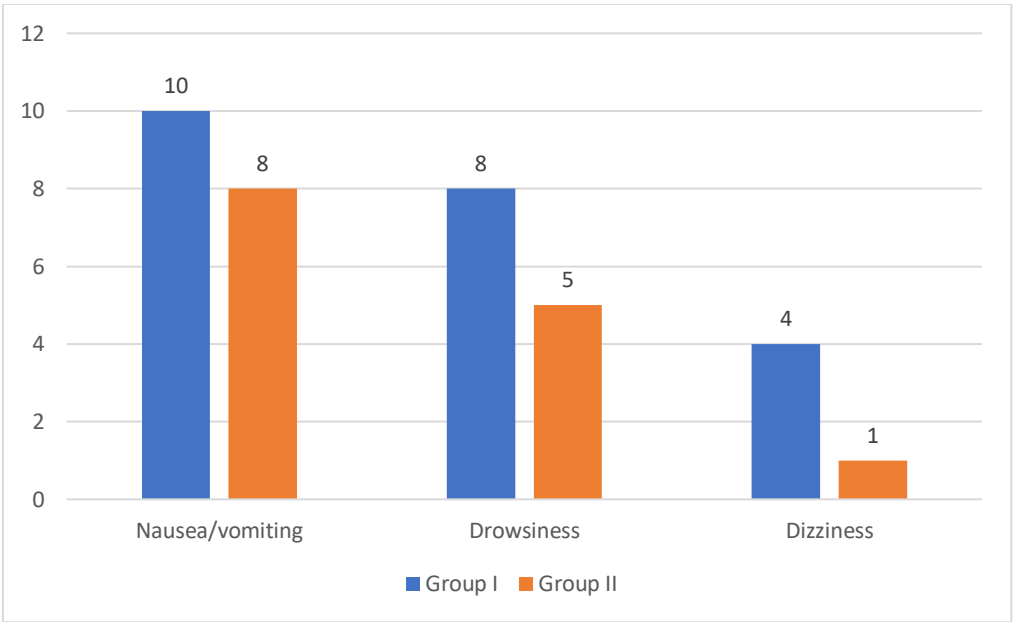
Table I shows that group I had 15 males and 10 females and group II had 14 males and 11 females.

Table II: Comparison of parameters

Groups		Group I	Group II	P value
Age (years)		34.6	37.2	0.92
Weight (Kgs)		72.5	74.4	0.05
Anesthetic duration (min)		60.2	68.7	0.04
Operation	Arthroscopy	12	8	0.87
	Elbow	7	9	
	Shoulder	6	8	
VAS		3.5	6.2	0.01

Table II shows thatthe mean age in group I was 34.6 years and in group II was 37.2 years, weight was 72.5 kgs in group I and 74.4 kgs in group II. Anesthetic duration was 60.2 minutes in group I and 68.7 minutes in group II. Operation performed was arthroscopy in 12 in group I and 8 in group II, elbow surgery was performed in 7 in group I and 9 in group II and shoulder surgery in 6 in group I and 8 in group II. The mean VAS in group I was 3.5 and in group II was 6.2. The difference was significant (P< 0.05).

Graph I: Assessment of side effects



Graph I shows that side effects were nausea/vomiting seen in 10 in group I and 8 in group II, drowsiness 8 in group I and 5 in group II and dizziness 4 in group I and 1 in group II. The difference was significant (P< 0.05).

DISCUSSION

Adequate postoperative analgesia without side effects is necessary to facilitate same-day discharge of ambulatory patients after ambulatory surgery.After ambulatory surgery, persistent, intractable pain is one of the most common surgical complications. Adequate analgesia is necessary to facilitate same-day discharge of ambulatory patients whereas inadequate analgesia may delay or prevent discharge.[6] Recently, the range of procedures undertaken on an ambulatory basis has increased. More complex and painful procedures are being performed, which means the choice of analgesia is of greater significance in facilitating discharge.Adequate pain relief is a key factor in reducing the morbidity and improving the overall patient satisfaction.[7]Intra-articular local anaesthetic

agents have been used either alone or in combination with other agent in numerous studies, however, it was observed that use of combination of drug is better than single drug for prevention of postoperative pain. Though, the combination of drugs provides synergistic effect and reduces the side effect compared to high dose of single drug still the best combination is not known.[8]The present study was conducted to compare morphine versus fentanyl for postoperative analgesia after ambulatory surgical procedures.

We found that group I had 15 males and 10 females and group II had 14 males and 11 females.Claxtonet al[9]studied 58 patients undergoing ambulatory surgery who received morphine or fentanyl for postoperative analgesia. In addition, the fentanyl group required more oral analgesia than the morphine group (69% vs 17%. The incidence of in-hospital side effects was similar. However, the morphine group had a more frequent incidence of postdischarge nausea and vomiting than the fentanyl group (59% vs 24%. There was no significant difference in the duration of stay in the PACU (morphine vs fentanyl, 69 +/- 15 min vs 71 +/- 20 min), the times to achieve recovery milestones, and fitness for discharge (morphine vs fentanyl, 136 +/- 41 min vs 132 +/- 40 min). The short duration of fentanyl was not associated with faster discharge times; most patients required additional analgesia to control pain.

We found that the mean age in group I was 34.6 years and in group II was 37.2 years, weight was 72.5 kgs in group I and 74.4 kgs in group II. Anesthetic duration was 60.2 minutes in group I and 68.7 minutes in group II. Operation performed was arthroscopy in 12 in group I and 8 in group II, elbow surgery was performed in 7 in group I and 9 in group II and shoulder surgery in 6 in group I and 8 in group II. The mean VAS in group I was 3.5 and in group II was 6.2. Pandit et al[10] compared fentanyl and butorphanol, an opiate with a duration of action similar to morphine, as a supplement to balanced anesthesia in outpatients. In the fentanyl group, there was a higher incidence of severe postoperative pain and the need for more analgesia. The incidence of nausea and vomiting was similar in both groups.

We found that side effects were nausea/vomiting seen in 10 in group I and 8 in group II, drowsiness 8 in group I and 5 in group II and dizziness 4 in group I and 1 in group II. Mehta et al[11]revealed thataddicted patients experienced less pain decrease compared to other patients. Most pain managements done for such patients were based on the type of drug abused, background status of the patient, and duration of drug abusing. It was suggested to use bolus opioids with higher therapeutic dosages at specified intervals. Trans-dermal opioid patches as well as implantable pumps could provide gradual release of medication. Some especial drug delivery systems were introduced to deliver more appropriate short-acting opioids to these patients.

Galinski et al[12]compared the analgesic effectiveness of fentanyl versus morphine in traumatic and non-traumatic patients in pre-hospital setting. Their results showed that no significant difference in the pain reduction was found between the two groups. In their study about 62% patients in the morphine group and 76% in the fentanyl group reported satisfactory pain management. Side effects showed no significant difference between the two groups. The authors concluded that fentanyl had comparable effects to morphine and they suggested to use fentanyl in acute severe pain in pre-hospital setting.

The limitation the study is small sample size.

CONCLUSION

Authors found that Morphine produced a better quality of post operative analgesia as compared to fentanyl.

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