

Comparison of Mean Consumption of Postoperative Analgesia with Intravenous Lidocaine Versus Normal Saline in patients Undergoing Laparoscopic Surgery

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ABSTRACT

Aim: To compare the mean postoperative opioid consumption in patients with and without perioperative intravenous lidocaine undergoing laparoscopic surgery

Methodology: The study, which took place at Idrees Teaching Hospital in Sialkot and was approved by the Ethical Committee, lasted six months. A random sample of 100 laparoscopic procedures was used in this study. That was all we required. The patients were separated into two groups according to their lot number. To begin, patients in group A received a 1.5mg/kg bolus of lidocaine, which was then followed by a continuous infusion of lidocaine at a rate of 2mg/kg/hr until the procedure was completed. All treatments were conducted in 60 minutes by a single surgical team. The intake of opioids persisted for 24 hours.

Results: The total number of patients in this trial was 49.3410.30. Male patients constituted 20% of the total population, with females accounting for the remaining 80%. In the lidocaine group, the mean dose was 81.8017.01mg, while the mean dose in the saline group was 89.3517.74mg. There was a significant difference in opioid use between the lidocaine and control groups (p-value=0.032).

Conclusion: According to the findings of the study, lidocaine reduces overall opioid use following surgery.

Keywords: Postoperative Opioids, Analgesia, and Pain Management

INTRODUCTION

It is critical to alleviate postoperative discomfort as soon as possible. Morbidity and mortality are increased as a result of inadequate pain treatment. It helps to reduce postoperative pain, hospital stays, and expenditures, as well as improve patient satisfaction. When changing pain treatment regimens, the patient's age, amount of fear or anxiety, surgical method, personal decision, and responsiveness to provided medicines should all be taken into consideration. The primary goal of postoperative pain management is to reduce the amount of analgesics prescribed. Analgesia that is multimodal and anticipatory in nature. It has been demonstrated that intravenous lidocaine can speed the restoration of bowel function following surgery. The use of perioperative IV lidocaine infusions in patients following laparoscopic abdominal surgery was found to relieve postoperative pain, minimise postoperative opioid doses, shorten hospitalisation time, and help in acute recovery. In one study, lidocaine was shown to need 6.21.43mm (morphine equivalent) fewer oral opioids than normal saline (8.62.48mm) in a total of 63 individuals (morphine equivalent).

Hypothesis: Patients having laparoscopic surgery who received intravenous lidocaine compared to those who received saline had a different mean postoperative opioid intake.

Patients undergoing laparoscopic surgery consumed an average of 6.2 1.43 millilitres of postoperative analgesia with perioperative I/V lidocaine and 8.6 2.48 millilitres with normal saline.

METHODOLOGY

Data Collection: The ethics committee granted permission to 100 patients who met the required conditions. We obtained informed permission as well as demographic information from the patients (name, age, contact). The patients were separated into two groups according to their lot number. Prior to induction, all participants

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received 0.04 mg/kg midazolam. It was administered 0.5 mg/kg of atracurium intravenously. In order to maintain MAC at one, we employed isoflurane. Patients in the PACU were asked to assess their pain on a scale from 0 to 10, with 0 representing no discomfort and 10 being the greatest. To begin, patients in group A received a 1.5mg/kg bolus of lidocaine, which was then followed by a continuous infusion of lidocaine at a rate of 2mg/kg/hr until the procedure was completed. Following surgery, each patient was assessed on an hourly basis. Pain scores more than 4 on the National Pain Scale (NRS) were treated with a 2 mg bolus of nalbuphine until they became less than 4. This information is derived from performa (attached).

RESULTS

Table 1: Descriptive Statistics of age of the patients

Age (Years)	n	100
	Mean	49.34
	SD	10.30
	Minimum	28
	Maximum	67
	Range	39

Table 2: Descriptive Statistics of age of patients with respect to study groups

		Study Group	
		Lidocaine	Normal Saline
Age (Years)	N	50	50
	Mean	53.14	45.54
	SD	10.04	9.18

A total of 100 laparoscopic surgery patients with an average age of 49.34 10.30 years were involved in the study. In all, 39 people ranging in age from 28 to 67 years were investigated. a single desk Patients undergoing anaesthesia were 53.14 10.04 years old, whereas those receiving Normal Saline were 45.54 9.18 years old. Male patients constituted 20% of the total population, with females accounting for the remaining 80%. 1:4 male to female ratio 1:4 male to female ratio. In the first hour, 4.8mg Lidocaine and 9.88mg 2.19mg normal saline were administered. The mean intake for the

fourth, sixth, and eighth hours was 14.28mg, 12.96mg, and 10.12mg, respectively. The mean intake during the 10th, 12th, and 18th hours was 8.44mg, 8.64mg, and 7.56mg, respectively, during those hours. Lidocaine and saline were consumed in a 24-hour period at a mean of 5.36mg and 7.92mg, respectively. The graph below illustrates the differences in opiate use between the two

groups. Both groups consumed far more opioids than they did lidocaine. With lidocaine, the average opioid intake after surgery was 81.80mg, while with normal saline, the average opioid consumption was 89.35mg. There was a significant difference in opioid use between the lidocaine and control groups (p-value=0.032).

Table 3: Descriptive Statistics of total consumption of patients with respect to study groups at different follow-up times

Opioid consumption at	Group		t-test	p-value	Significance
	Lidocaine (n=50)	Normal Saline (n=50)			
Hour 1	13.56±4.84	9.88±2.19	4.900	0.000	Significant
Hour 4	14.28±4.68	14.80±5.16	0.528	0.599	Insignificant
Hour 6	12.96±3.77	13.68±3.99	0.927	0.356	Insignificant
Hour 8	10.12±3.01	11.34±4.51	1.591	0.115	Insignificant
Hour 10	8.44±2.85	12.04±2.87	6.291	0.000	Significant
Hour 12	8.64±2.90	10.56±2.71	3.421	0.001	Significant
Hour 18	7.56±3.29	8.60±2.37	1.815	0.073	Insignificant
Hour 24	5.36±2.27	7.92±1.94	6.074	0.000	Significant

DISCUSSION

A total of 81.80mg of opioids were produced by lidocaine after 24 hours, compared to 89.35mg produced by normal saline. There was a significant difference in opioid use between the lidocaine and control groups (p-value=0.032). In their investigation, Koppert and colleagues discovered that the total amount of analgesics used was 103.1mg lidocaine and 159.0mg placebo/normal saline, respectively. After 72 hours, there was a statistically significant difference between the two groups. The total amount of lidocaine consumed was 54mg, whereas the total amount of placebo consumed was 74mg (p-value 0.05). The administration of IV lidocaine has a real preventive analgesic effect, avoiding the onset of central hyperalgesia.

After 48 hours, the total amount of analgesics consumed with lidocaine was 0.54g, whereas the total amount consumed with placebo was 0.95g. The placebo group ingested fewer analgesics than the control group. The researchers observed that intravenous lidocaine is not only effective but also safe when it comes to lowering postoperative pain in individuals undergoing laparoscopic surgery. When compared to the saline group, the lidocaine group required significantly less oral opioids (P = 0.01).

CONCLUSION

It was discovered that intraoperative IV lidocaine infusion reduces overall opioid use, which aids in postoperative recovery, according to the research. These findings may be useful in treating individuals who do not require the use of opioids.

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