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Original Research Paper

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EFFECT OF PERIOPERATIVE IV INFUSION OF LIGNOCAINE VS DEXMEDETOMIDINE IN POST-OPERATIVE PAIN AND RECOVERY IN PATIENTS UNDERGOING LAPAROSCOPIC CHOLECYSTECTOMY.

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ABSTRACT Laparoscopic cholecystectomy is commonly performed as an ambulatory surgery, although the approach is not pain-free. Postsurgical pain is one of the most important issues that could have a significant effect on postoperative recovery and comfort. Perioperative intravenous infusion of both lignocaine and dexmedetomidine had a beneficial effect on post-operative analgesia and reduction in requirement of opioids in the early post-operative period. Although there was no significant difference between dexmedetomidine and lignocaine in terms of post-operative analgesia and recovery.

KEYWORDS : IV Lignocaine and Dexmedetomidine, Postoperative Analgesia, Laparoscopic cholecystectomy.

INTRODUCTION

Laparoscopic cholecystectomy produces less postoperative pain compared to open cholecystectomy and it can be performed on an ambulatory basis. However, some patients still experience severe pain that requires strong analgesia during the first 24 hr after laparoscopic cholecystectomy. Since the postoperative pain is the common complaint of patients after laparoscopic cholecystectomy, adequate postoperative pain control would be expected to speed up recovery in laparoscopic cholecystectomy as an ambulatory surgery.

The present study echoed previous studies, that the intravenous dexmedetomidine and lignocaine reduced the requirement for opioids in the postoperative period. However, VAS scores and analgesic consumption in the ward were not significantly different between the two groups.

Aims and Objectives Of The Study

The primary aim of this clinical study is to evaluate the effects of IV lignocaine and dexmedetomidine given perioperatively in view of postoperative analgesia and recovery in two groups of patients undergoing laparoscopic cholecystectomy.

This prospective, randomized, single blind study is undertaken to evaluate the effect of perioperative IV infusion of lignocaine vs dexmedetomidine in post operative pain and recovery in patients undergoing laparoscopic cholecystectomy.

Aim of Study is-

- Intraoperative hemodynamic stability
- Postoperative analgesia and sedation
- Postoperative hemodynamic stability

MATERIALS AND METHODS

60 patients who need to be operated for laparoscopic cholecystectomy was randomly assigned into two groups;

- Group L- Patient received an intravenous lignocaine bolus of 1.5mg/kg over 10 minutes.
- Group D - Patient received an intravenous Dexmedetomidine bolus of 1 mcg/kg over 10 minutes.

In operation theatre intravenous cannula of propersize was inserted into the largest vein on the Forearm and infusion of DNS was started at a rate of 5ML/KG/HR standard monitoring ECG, NIBP, and SPO2 were attached and monitored. Baseline hemodynamic parameters were recorded and study drug was given and then pre oxygenation was started.

GA was given. Air sealed face mask of correct size was held closed to the patient's face with oxygen of 8 to 10 litters for 2-3 minutes. Premedication of Inj. glycopyrrolate 0.004mg/kg IV, Inj. Ondansetron 0.15 mg/kg IV, Inj. Fentanyl 2 microgram/kg IV was given. Induction with Inj. Propofol 2-3mg/kg IV, Inj. Suxamethonium 2mg/kg IV was given and intubation with endotracheal tube was done.

After insertion of endotracheal tube, bilateral air entry was checked and cuff was inflated and tube fixed. Heart rate, systolic and diastolic blood pressure and SPO2 was monitored throughout the procedure and recorded. After thorough procedure Oral/ET suction was done and Inj. Glycopyrrolate 0.008mg/kg IV. Inj. Neostigmine 0.05 mg/kg IV for reversal was given and cuff deflated, endotracheal tube was removed when the patient was established protective reflexes with adequate tidal volume, muscle tone/power hemodynamic stability and patient started following verbal commands.

Patient was shifted to post op ward and assessed for hemodynamics, analgesia and any complications.

DEMOGRAPHIC PROFILE

S. No	Demographic Characteristics	L Group	D Group	p-value
1	Age in years	34.96(±10.18)	33.76(±9.71)	0.64
2	Male/Female	16/14	15/15	0.79
3	ASA 1 & 2	21/9	22/8	0.77

By conventional criteria the age distribution, gender and ASA PS Classification status between the L group and D group among study subjects is considered to be statistically NOT significant since $p > 0.05$.

Intraoperative Hemodynamic Parameters

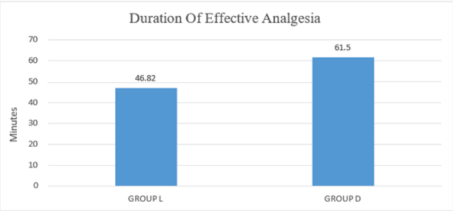
The mean intra-operative heart rates, systolic BP, diastolic BP, mean arterial pressures of both the groups were compared using independent samples test.

In the present study, the changes in heart rate, systolic blood pressure, diastolic blood pressure and mean arterial pressures during surgery from 2 minutes after intubation till 90 minutes at different interval found lower in group D compared to group L which was statistically significant($p<0.05$).

Post Operative Hemodynamic Parameters

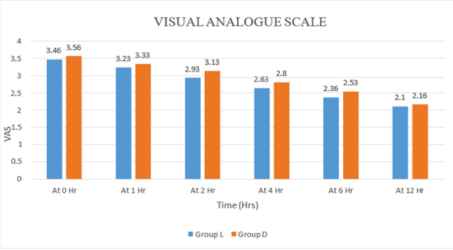
The mean post-operative heart rate, systolic BP, diastolic BP, mean arterial pressures of both the groups were observed throughout the post operative period. The difference was statistically not significant between Group L and Group D.

Mean Duration Of Analgesia



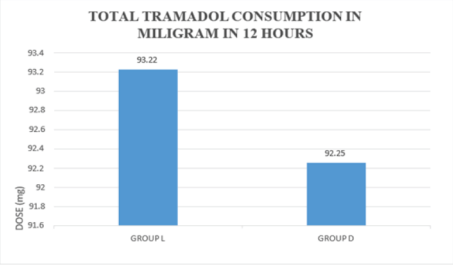
Duration of effective analgesia after extubation in post anaesthesia care unit was higher in Group D (61.5±14.57) compared to Group L (46.82±11.55) which was statistically significant ($p = < 0.001$).

Mean Post Op VAS Score



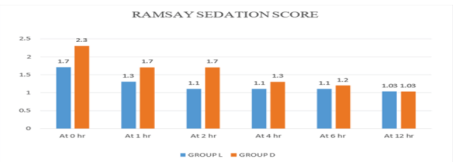
The mean VAS scores of both the groups are compared using independent samples t test. The Visual analog score between Group L and Group D was compared and difference between both the group was not statistically significant ($p > 0.05$).

Tramadol Consumption In 12hours Postoperative Period



Total tramadol consumption in postoperative period up to12 hours was compared between Group L and Group D. The difference between Group L and Group D was statistically not significant ($p = 0.63$).

Post Op Sedation Grading



Ramsay sedation score was higher in Group D compared to Group L in postoperative period up to 2 hours as the difference was statistically significant ($p < 0.05$). However, after 2 hours there was no statistically significant difference between both the groups.

DISCUSSION

The results of our study have showed that perioperative infusions of dexmedetomidine and lignocaine were found to have a similar analgesic sparing effect and provide postoperative pain relief which reduces consumption of NSAIDs, opioid and other modes of analgesia in post-operative period.

Duration of effective analgesia after extubation in post anaesthesia care unit was higher in Group D (61.5±14.57) compared to Group L (46.82±11.55) which was statistically significant ($p = < 0.001$).

The Visual analogue score between Group L and Group D was compared upto 12hr post-operatively and difference between both the group was not statistically significant ($p > 0.05$).

From my study, I conclude that

1. The intra-operative hemodynamic parameters such as heart rate and mean arterial pressure were lower in Group D compared to Group L from 2 minute after intubation up to 90 minutes.
2. The Visual analogue scale score was low in both Group L and Group D in postoperative period up to 12 hours. but there was no statistically significant difference regarding visual analogue scale up to 12 hours postoperatively. This suggest both dexmedetomidine and lignocaine provide analgesia and reduced requirement of opioids in postoperative period.
3. Ramsay sedation score was higher in Group D compared to Group L up to 2 hours in postoperative period. However, after 2 hours there was no statistically significant difference between Group L and Group D.

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