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A comparative study of ketofol (ketamine and propofol) with propofol alone for vas in patients undergoing laparoscopic cholecystectomy

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Abstract

Background: To compare the VAS score in ketofol (ketamine and propofol) with propofol alone for vas in patients undergoing laproscopic cholecystectomy

Methods: Prospective, randomized, double blinded controlled trial. After approval by the research ethics committee and written informed valid consent of the patients, the proposed study was carried out for a period of one year in 60 patients, in ASA-I and ASA-II patients, aged between 19 to 60 years of either sex, who were posted for laparoscopic cholecystectomy surgery at Indira Gandhi Medical College, Shimla.

Results: Mean VAS score at 30 minute for group P was 2.97 ± 1.03 and for group K was 3.43 ± 0.63, for 1hr for group P was 2 ± 0.45 and for group K 2.37 ± 0.72, at 2hr for group P 0.87 ± 0.34 and for group K0.63 ± 0.49, all of them were statistically significant , with p – value {p <0.05}. Except 1.5 hr.

Conclusion: VAS scores were less in group P at 30 minute, 1hr and 1.5 hour interval in postoperative period as compared to group K.

Keywords: VAS, Propofol, Ketamine

Introduction

The administration of anaesthesia with the intent to admit and discharge the patient on the day of the surgical procedure is known as ambulatory anaesthesia. The continued growth in ambulatory surgery is related to expansion in minimally invasive surgical techniques and improved anaesthetic techniques. Total intravenous anaesthesia as currently practiced uses several types of drugs, each performing a specific role.

Propofol is a newer intravenous anaesthetic agent having favourable pharmacokinetic profile. It has already achieved considerable popularity for induction and maintenance of anaesthesia for short duration surgeries. Propofol has high clearance rate and rapid decline in blood concentration. Ketamine which is water soluble intravenous anaesthetic belongs to

phencyclidine group of drugs. It is the only intravenous anaesthetic which has hypnotic, analgesic, amnestic properties and cheaper than fentanyl and butorphanol.

Material and methods

Study Design: Prospective, randomized, double blinded controlled trial. After approval by the research ethics committee and written informed valid consent of the patients, the proposed study was carried out for a period of one year in 60 patients, in ASA-I and ASA-II patients, aged between 19 to 60 years of either sex, who were posted for laproscopic cholecystectomy surgery at Indira Gandhi Medical College, Shimla.

Exclusion Criteria: patient's refusal, uncontrolled hypertension, laparoscopic cholecystectomies converted to open cholecystectomies, drug allergy.

The patients were randomized into two groups:

Group P: Patients received Propofol for induction and maintenance of anaesthesia

Group KP: Patients received combination of Ketamine and Propofol for induction and maintenance of anaesthesia.

The study drug infusion was prepared by an anaesthesiologist who did not participate in collection of data in that study. Anaesthesiologist who collected data, the operating surgeon and the patient were blinded to drug infusion.

Patient recruitment into the study

All patients underwent a routine pre-anaesthetic checkup. During this, thorough history and general physical examination of the patient was carried out. Routine investigations such as haemoglobin, fasting or random blood sugar, blood urea, serum creatinine, serum electrolytes, ECG and chest X-ray were documented.

Study protocol was explained to all the patients during pre-anaesthetic evaluation and informed consent was taken and signed.

The patients were made familiar with visual analogue score, VAS (0 for no pain and 10 for the worst imaginable pain).The patient was instructed for a fasting period of 6 hrs. Tablet Alprazolam was advised to patient as per department protocol.

Study Drug

For induction of anaesthesia: Study drug was given slowly till loss of verbal response

For maintenance of anaesthesia: Study drug was infused at a rate of 50 mcg/kg/min for 10 min and then 25 mcg/kg/min.

Study Drug Preparation

In a 50ml syringe- 50 ml study drug was loaded

Group P: 50 ml of Propofol 1% (10mg/ml). [1ml of study drug was containing Propofol 10mg]

Group KP: 40 ml of Propofol 1% (10mg/ml) + 10 ml of Ketamine (10mg/ml).

Results

The socio-demographic variable in both groups were comparable.

Table no:-1.Comparison of VAS Scores in postoperative period

Duration (in post op period)	Group –P (n=30) Mean ± S.D	Group –K (n=30) Mean ± S.D	Results
30 min	2.97 ± 1.03	3.43 ± 0.63	Significant
1 hr	2 ± 0.45	2.37 ± 0.72	Significant
1.5 hr	1.27 ± 0.52	1.47 ± 0.57	Not Significant
2 hr	0.87 ± 0.34	0.63 ± 0.49	Significant

Mean VAS score at 30 minute for group P was 2.97 ± 1.03 and for group K was 3.43 ± 0.63, for 1hr for group P was 2 ± 0.45 and for group K 2.37 ± 0.72, at 2hr for

group P 0.87 ± 0.34 and for group K0.63 ± 0.49, all of them were statistically significant , with p – value {p <0.05}. Except 1.5 hr.

Discussion

In postoperative period VAS scores were compared between two groups. At first 30 minutes of postoperative period VAS score was significantly less (2.97±1.03) in group P as compared to group K (3.43±0.63). Similarly at 1hr of postoperative period VAS score was significantly less (2±0.45) in group P than group K (2.37±0.72) . At 1.5 hr of postoperative period although VAS score for group P was less(1.27±0.52) then group K(1.47±0.57) but it was not statistically significant. However at 2hr of postoperative period group K showed statistically lower VAS score (0.63±0.49) then group (0.87±0.34).

Nazemroaya B et al.[4] in a comparative study of Propofol and Ketamine Combination (Ketofol) and Propofol and Fentanyl Combination (Fenofol) did evaluation of the pain score and the level of sedation of the patients in the two groups also showed that the pain score and sedation level of the patients in the fenofol group with the mean values of 4.8 ± 1.53(VAS score) and 5.38 ± 0.87(Ramsay sedation score), respectively, were significantly lower than those in the ketofol group with a mean of VAS score 5.41 ± 4.15 and Ramsay score 6.00 ± 0.01, respectively (P < 0.05) .This observation was same as in our study.

Amir Sabertanha et al .[4] did a study on patients undergoing orthopedic leg surgeries used propofol infusion (100 µg/kg/min) and propofol-ketamine infusion (50 µg/kg/min propofol + 25 µg/kg/min ketamine) for the maintenance of anesthesia respectively.It was found that compared to the propofol group, the ketofol group reported more pain at the outset which got improved by the end of follow-up. This study was similar to our study because of use of simultaneous infusion of fentanyl in propofol group in our study.

Conclusion

VAS scores were less in group P at 30 minute, 1hr and 1.5 hour interval in postoperative period as compared to group K.

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