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Original research article

EFFICACY AND SAFETY OF PRE-EMPTIVE USE OF ORAL TAPENTADOL VERSUS ORAL PREGABALIN FOR POST OPERATIVE ANALGESIA FOLLOWING CARDIAC SURGERY: A COMPARATIVE STUDY

[1]Shah Riya J, [2]Sasturkar Vasanti K, [3]Jambure Nagesh, [4]Annachhatre Ajita S

MBBS, MD Anesthesia, Fellow in Cardiovascular Anesthesia, Department of Anaesthesiology, MGM Medical College, Sambhajinagar, Aurangabad, Maharashtra, India

MBBS, MD Anesthesia, Department of Anaesthesiology, MGM Medical College, Sambhajinagar, Aurangabad, Maharashtra, India

MBBS, MD Anesthesia, FCA [Cardiovascular Anesthesia], Department of Anaesthesiology, MGM Medical College, Sambhajinagar, Aurangabad, Maharashtra, India

MBBS, MD Anesthesia, FIACTA, FICCC, Department of Anaesthesiology, MGM Medical College, Sambhajinagar, Aurangabad, Maharashtra, India

Corresponding Author:
Annachhatre Ajita S

Abstract

Background and Objective: After cardiac surgery, post operative pain is a major concern for patient as well as surgeon. Establishment of analgesia even before surgical incision is pre-emptive analgesia. Primary objective of this study is comparison of duration of analgesia in patients who were administered oral Tapentadol versus oral Pregabalin prior the surgery.

Methods and Material: A prospective randomised double-blind study was conducted on 66 patients undergoing elective cardiac surgery using midline sternotomy incision. Patients were divided into two groups-Group T and Group P where patients were given oral Tapentadol 100 mg and oral Pregabalin 150 mg respectively 2 hours prior the surgery. All patients were monitored for duration of analgesia (time of first rescue analgesic after extubation from time of ingestion of the drug), VAS score, heart rate, mean arterial pressure, sedation score, intraoperative requirement of fentanyl, side effects (if any).

Results: There was no statistical significant difference in duration of analgesia between two groups (p value > 0.05). There was statistically significant difference in intra operative fentanyl requirement (p value < 0.05), it was lower in Group P than in Group T. The difference in Median VAS score at 0 hrs and 24 hrs post extubation was statistically significant, where VAS scores were less in Group P than in Group T.

Conclusion: Administration of oral pregabalin as pre-emptive analgesic showed comparable duration of analgesia but better safety profile in terms of haemodynamic stability and less sedation as well as respiratory depression than oral Tapentadol.

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Keywords: Cardiac surgery, pre-emptive analgesia, tapentadol, pregabalin, VAS score

Introduction

Post cardiac surgery, poor pain management can lead to pulmonary complications (atelectasis, pneumonia, bronchial secretion stasis), cardiovascular complications (increased oxygen consumption, tachycardia), and musculoskeletal complications (muscle weakness and disuse). Multimodal approach to postoperative pain management includes the use of paracetamol, opioids such as morphine and fentanyl through intravenous (IV) or patient-controlled analgesia (PCA) routes, non-steroidal anti-inflammatory drugs (NSAIDs), local anesthetics, opioid analogs as well as use of preemptive analgesia technique [1].

Preemptive analgesia establishes an analgesic state before the incision is taken. It covers the period of surgery and initial post-operative period. Due to surgical trauma there is development of central sensitization to pain and postoperative hyperesthesia occurs which delays the recovery. In the preemptive analgesia technique this central sensitization and subsequent development of postoperative hyperesthesia is prevented by use of preoperative analgesic methods [2, 3].

Various pharmacological regimes are available, i.e. NSAIDs, opioids, ketamine, systemic antiepileptics (pregabalin, gabapentin) and local anesthetics (neuraxial administration, peripheral nerve blocks, wound infiltrations) [3, 4]. Tapentadol, a centrally acting synthetic opioid analgesic [5] and Pregabalin, a gamma-amino butyric acid (GABA) analogue are two such agents that have been tried as preemptive analgesic technique [1, 7].

Although several randomized clinical trials and meta-analyses have been conducted comparing the safety and efficacy of tapentadol and pregabalin as preemptive analgesic separately; mostly in non-cardiac surgeries and very few in cardiac surgeries; we did not come across head-to-head clinical trial in the literature comparing the preemptive use of the above mentioned two drugs for postoperative pain following cardiac surgery, hence this study was planned. We hypothesized that both Tapentadol and Pregabalin are equally effective as preemptive analgesic following cardiac surgery when administered orally.

Materials and Methods

After obtaining written permission of the institutional ethics committee; this prospective randomized double-blind study was conducted in patients of either gender in an age group of 18-65 years, weighing between 40-85 kg posted for elective cardiac surgery using midline sternotomy incision under general anaesthesia. Patients with pregnancy, epilepsy, stroke or brain tumour; patients on mono amino oxidase inhibitors, tricyclic antidepressants, serotonin norepinephrine reuptake inhibitors; patients with opioid tolerance or opioid dependence and patients with left ventricular dysfunction (ejection fraction < 40%) were excluded from the study.

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Sample Size Calculation

The parameter use for sample size calculation is difference analgesia in two study groups.

For Calculating sample Size, following is applies:

$$n = 2 \frac{S^2 (Z1+Z2)^2}{(M1-M2)^2}$$

Where

S = Pooled Standard deviation

Z1 = Z value associated with alpha

Z2 = Z value associated with beta

M1 = Mean test intervention

M2 = Mean control intervention

N = Minimum sample size

Minimum sample size required was 33.

After eliciting detailed history, all patients underwent complete medical and laboratory examinations. A voluntary written informed consent was taken from all the eligible and willing patients. Before enrolment of first patient in this study registration for clinical trial was done (CTRI no. -CTRI/2021/11/037858).

A total of 66 patients were randomly assigned to two groups of 33 patients each (Group T and group P) using sealed envelopes. Two hours prior to surgery in the pre operative room, baseline parameters such as heart rate (HR), mean arterial pressure (MAP), oxygen saturation (SpO2), respiratory rate (RR) and sedation score of patients were recorded.

Richmond Agitation Sedation Scoring (RASS) was used to assess sedation score (level of alertness and agitated behavior) in patients. The scoring is defined as,

RASS score	Parameter
+4	Combative
+3	Aggressive
+2	Frequent non-purposeful movement
+1	Anxious but not aggressive
0	Alert and calm
-1	Awakens to voice (eye opening > 10 seconds)
-2	Light sedation (eye opening < 10 seconds)
-3	Moderate sedation (no eye contact)
-4	Deep sedation (eye opening on physical stimulation)
-5	Unarousable

Each patient received the assigned study drug with sips of water. Group T received Tablet Tapentadol 100 mg and Group P received Tablet Pregabalin 150 mg. The person administering the study drug to the patient was not involved in the study. Both the investigator and study participant were blind to the study drug used making the study

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double blind.

Patient was monitored for HR, MAP and sedation score in the preoperative room every 30 min. for two hours after administration of study drug. Patient was premedicated with Inj. Midazolam 0.05mg/kg + Inj. fentanyl 2-4mcg/kg. Anaesthesia was induced with Inj. Propofol l-1.5mg/kg and endotracheal intubation was facilitated by Inj. vecuronium 0.1-0.2mg/kg. Anaesthesia was maintained with sevoflurane (end-tidal concentration 0.8-1.5%), fentanyl and Atracurium infusion. Intra operatively patient's MAP, HR, SPO2, ETCO2, Urine output and Fentanyl requirement were monitored. Extubation was done after giving Inj. Glycopyrrolate 0.5 mg + Inj. Neostigmine 2.5 mg IV within 4-6 hrs after the surgery. Patients, who did not get extubated even after 6 hrs post operatively, were excluded from the study.

Post operatively patient's HR, MAP, RR, SpO2, Sedation score and side effects (if any) were monitored for 24 hours. Inj. Paracetamol 1gm was administered every 6 hourly to all patients. Patients were assessed for pain using VAS (visual analogue scale) scoring system at rest and at deep breathing at 0 hour (at the time of extubation) and 3 hour, 6 hour, 12 hour and 24 hour from extubation.

When VAS was > 4 or patient complained of pain, rescue analgesia in the form of IV Inj. Fentanyl 25mcg was administered. If pain was not relieved, second rescue analgesic i.e. IV Inj. Tramadol 1mg/kg was administered. Total rescue analgesic consumption was assessed for 24 hours post operatively. The duration of analgesia was calculated from the time of administration of the study drug till the time of 1st dose of rescue analgesic taken. Inj. Ondansetron 0.1mg/kg was administered when patient complained of nausea or vomiting. All treatment emergent adverse events were documented.

Statistical analysis

All data was systematically compiled and statistically analysed after the completion of the study. Quantitative data was expressed as mean ± standard deviation. Qualitative data was expressed as frequency and percentages. Student's paired "t" test was applied when comparing two means. Chi square test was used to compare qualitative parameters. *P* value less than 0.05 was considered as statistically significant and less than 0.001 as statistically highly significant. P value more than 0.05 was considered as not significant.

Results

The demographic parameters were comparable in both the groups (P > 0.05).

Duration of analgesia in Group P was 753$\pm$115 min and in Group T was 742$\pm$93.8min. There was no statistical significant difference between them (Table 1). The difference in Median VAS score at 0 hrs and 24 hrs post extubation was statistically significant with p value being 0.014 and 0.012 respectively, where VAS scores were less in Group P than in Group T. At other time period the median VAS score in both the groups was comparable (Table 2). The number of doses of Inj. Fentanyl & Tramadol (as rescue analgesic) required in post extubation period were comparable in both the groups (p>0.05). There was statistically significant difference in intra operative fentanyl requirement (p value < 0.05) where the requirement was lower in Group P than in Group T (Graph 1).

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There was no significant difference in HR in preoperative period after administration of study drug between both the groups. During the surgery HR was comparatively less in Group T then Group P at 60 min, 180 min, 210 min and 240 min. After extubation at 0 hr and 3 hr HR was less in Group T than in Group P (Table 3). Mean arterial pressure (MAP) in Group P was lower than in Group T throughout the study period (p<0.05) (Table 3).

There was statistically significant difference in respiratory rate after administration of study drug in preoperative period & after extubation in postoperative period between the two study groups with group T having lower respiratory rate (p value =0.000); although none of the patients in Group T had respiratory rate below 10 per minute (Table 4). There was no statistically significant difference in RASS score in preoperative period after administration of study drug between group P and group T (p value> 0.05) The difference in RASS score between both groups was statistically significant at 0 hrs and 3 hrs post extubation (p<0.05) where score was less in Group P than in Group T. At other time period RASS score was comparable in both groups. (p > 0.05) (Table 5). None of the patients in both the groups showed any adverse effects like headache, dizziness, nausea & vomiting.

Table 1: Comparison of Duration of Analgesia between two groups

Duration of Analgesia (in min)	**Group P N = 33**	**Group T N = 33**	**t-Value**	**p- Value**
Mean ±SD	753±115	742±93.8	0.28	0.785 Not Sig.

Table 2: Comparison of Median VAS Score between two groups in post operative period

VAS Score at	**Group P N=33**	**Group T N=33**	**Z-value**	**p-Value**
	Median (IQR=Q3-Q1)	**Median (IQR=Q3-Q1)**		
0 Hrs. (Time of extubation)	04(03-04)	04(04-04)	2.453	0.014 Sig.
3 Hrs.	04(03-04)	04(03-05)	1.292	0.196 Not Sig.
6 Hrs.	04(03-04)	04(03-04)	0.000	1.000 Not Sig.
12 Hrs.	03(03-04)	03(03-04)	0.080	0.936 Not Sig
24 Hrs.	03(03-04)	03(03-03)	2.514	0.012 Sig.

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Table 3: Comparison of heart rate (per min) and mean arterial pressure (mm hg) pre-operatively, intra-operatively and post-operatively

Time	Heart rate (per min) (Mean ± S.D)			Mean arterial pressure (mmHg) (Mean ± S.D)		
	Group P (n = 33)	Group T (n = 33)	p value	Group P (n = 33)	Group T (n = 33)	p value
Pre-operative						
0 min	79.10 ± 10.20	77.70 ± 9.48	0.567	87.21 ± 6.89	91.30 ± 6.64	**0.017***
30 min	77.94 ± 9.25	75.70 ± 9.49	0.335	81.39 ± 7.27	87.09 ± 7.23	**0.002***
60 min	77.33 ± 9.68	76.20 ± 10.60	0.646	81.15 ± 7.58	86.85 ± 7.19	**0.003***
90 min	78.12 ± 9.75	76.12 ± 9.62	0.405	80.97 ± 7.47	86.73 ± 7.56	**0.003***
120 min	77.58 ± 9.24	75.00 ± 10.20	0.286	80.73 ± 7.23	86.55 ± 7.72	**0.002***
Intra-operative						
0 min	79.80 ± 10.20	75.30 ± 11.40	0.097	82.42 ± 7.95	88.55 ± 9.18	**0.005***
30 min	79.52 ± 9.45	74.70 ± 11.30	0.063	81.88 ± 7.48	87.39 ± 7.98	**0.005***
60 min	80.24 ± 8.58	74.80 ± 11.20	**0.032***	82.24 ± 7.22	86.97 ± 7.25	**0.010***
90 min	79.70 ± 8.86	76.70 ± 10.40	0.216	82.36 ± 7.13	86.36 ± 6.64	**0.022***
120 min	80.42 ± 8.81	77.70 ± 9.89	0.241	82.48 ± 7.07	85.36 ± 5.99	0.079
150 min	82.48 ± 9.50	78.48 ± 9.73	0.096	82.73 ± 7.66	85.15 ± 6.25	0.164
180 min	84.18 ± 9.62	78.00 ± 8.96	**0.009***	83.88 ± 6.96	85.21 ± 6.24	0.416
210 min	83.64 ± 9.58	78.85 ± 8.96	**0.040***	82.73 ± 6.61	84.30 ± 5.68	0.303
240 min	86.60 ± 10.00	78.79 ± 9.23	**0.002***	83.76 ± 6.81	84.36 ± 5.30	0.688
Post-operative						
0 hr	90.80 ± 11.50	83.90 ± 10.80	**0.015***	82.61 ± 7.99	87.64 ± 5.42	**0.004***
3 hr	91.10 ± 11.70	85.60 ± 10.60	**0.048***	84.48 ± 7.67	88.79 ± 5.36	**0.011***
6 hr	89.70 ± 11.50	84.70 ± 10.40	0.067	83.09 ± 6.60	87.52 ± 4.47	**0.002***
12 hr	88.10 ± 11.20	84.48 ± 9.01	0.187	82.79 ± 5.63	86.61 ± 4.17	**0.003***
24 hr	87.70 ± 11.90	82.97 ± 8.38	0.067	81.33 ± 6.44	85.52 ± 3.91	**0.003***

*Indicates statistical significance.

Table 4: Comparison of respiratory rate (per min) pre-operatively, intra-operatively and post-operatively

Time	Respiratory rate (per min) (Mean ± S.D)		
	Group P (n = 33)	Group T (n = 33)	p value
Pre-operative			
0 min	16.61 ± 1.54	14.79 ± 1.11	**< 0.001***
30 min	16.18 ± 1.53	14.79 ± 1.11	**< 0.001***
60 min	15.64 ± 1.62	14.67 ± 1.29	**< 0.001***
90 min	15.64 ± 1.54	13.82 ± 1.36	**< 0.001***
120 min	15.33 ± 1.63	13.21 ± 1.49	**< 0.001***
Post-operative			
0 hr	13.91 ± 1.77	11.09 ± 2.07	**< 0.001***
3 hr	13.82 ± 2.10	10.55 ± 1.95	**< 0.001***
6 hr	13.42 ± 2.14	10.64 ± 1.54	**< 0.001***
12 hr	13.42 ± 2.35	10.42 ± 1.30	**< 0.001***
24 hr	13.64 ± 2.47	10.18 ± 1.45	**< 0.001***

*Indicates statistical significance.

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Table 5: Comparison of RASS Score between two groups

RASS Score at	RASS Score	Group P No. (%)	Group T No. (%)	χ^2 -Value	p-Value
After study drug 30 Min.	0	01(3.03)	01(3.03)	-	-
	1	32(96.97)	32(96.97)		
60 Min.	0	08(24.24)	14(42.42)	2.455	0.117 Not Sig.
	1	25(75.76)	19(57.58)		
90 Min.	0	29(87.88)	27(81.82)	0.471	0.492 Not Sig.
	1	04(12.12)	06(18.18)		
120 Min.	0	31(93.94)	31(93.94)	-	-
	1	02(6.06)	02(6.06)		
0 Hrs. (Time of extubation)	0	00 (00)	06 (18.18)	9.923	0.007 Sig
	1	02 (6.06)	06 (18.18)		
	-1	31(93.94)	21(63.64)		
3 Hrs.	0	21(63.64)	21(63.64)	6.141	0.046 Sig.
	1	04 (12.12)	10 (30.30)		
	-1	08(24.24)	02 (6.06)		
6 Hrs.	0	28(84.85)	22(66.67)	3.387	0.184 Not Sig.
	1	05(15.15)	10 (30.30)		
	-1	00 (00)	01(3.03)		
12 Hrs.	0	19(57.58)	17 (51.52)	1.146	0.564 Not Sig.
	1	14(42.42)	15(45.45)		
	-1	00 (00)	01(3.03)		
24 Hrs.	0	07(21.21)	15(45.45)	5.793	0.055 Not Sig.
	1	26(78.79)	17 (51.52)		
	-1	00 (00)	01(3.03)		

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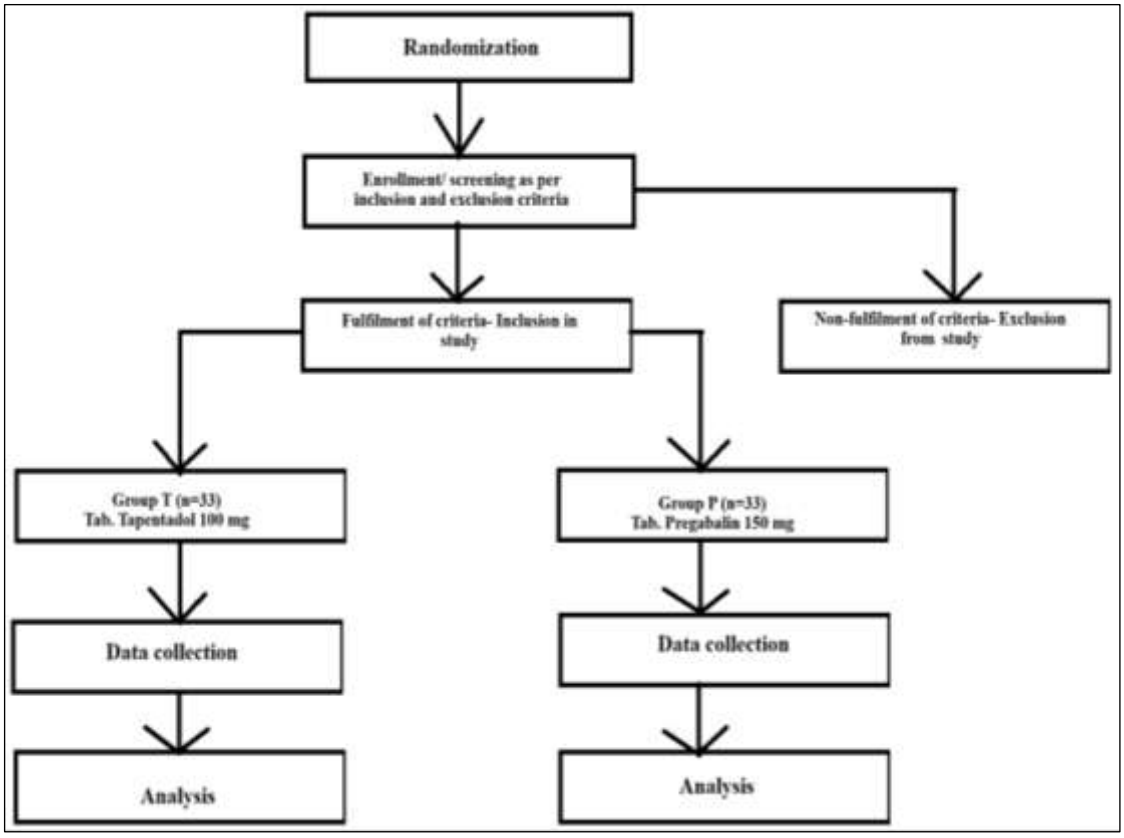
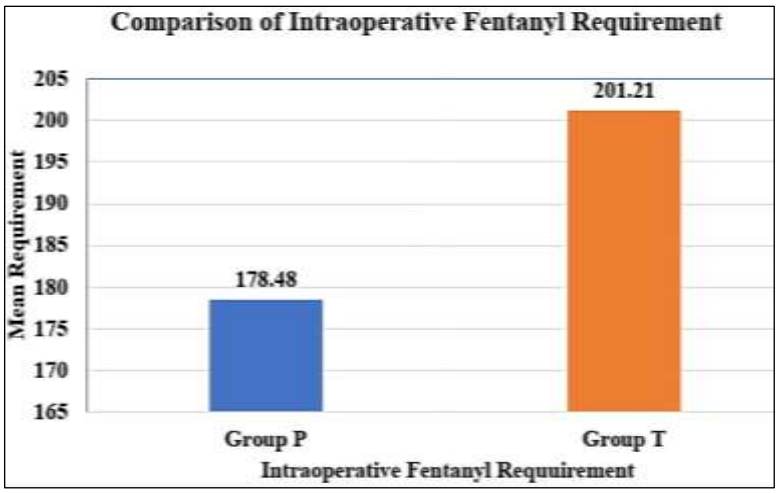


Fig 1: Consort flow diagram of study procedure



Graph 1: Comparison of Intra operative Fentanyl Requirement between both groups

Discussion

The study entitled "Efficacy and Safety of pre-emptive use of oral Tapentadol versus oral Pregabalin for post operative analgesia following cardiac surgery: A comparative study" was conducted in a medical college hospital over a period of 2 years.

Pain is a sensory and emotional experience which is unpleasant and is associated with acute or potential tissue damage, which causes increase in catecholamines, decrease in vagal tone and increase in oxygen consumption [5]. Taking arterial and venous line access under local anaesthesia prior to induction can be painful and discomforting for

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the patient which leads to hemodynamic instability. Incisional pain, indwelling thoracotomy tubes, sternal retraction cause strong pain response and hemodynamic instability in intraoperative as well as post operative period [5].

Pre-emptive analgesia means prevention of establishment of central sensitization which are evoked by incisional and inflammatory injuries during the surgery and in early post operative period. It acts as protective mechanism on nociceptive system. There are different modalities for pre-emptive analgesia. We compared oral opioid agonist (Tapentadol) and oral GABA analogue (Pregabalin) in this study as pre-emptive analgesia [3].

Tapentadol is a weak μ-opioid receptor agonist and norepinephrine reuptake inhibitor. Its structure and mechanism is similar to Tramadol. It provides effective analgesia which is equal to one-third of the analgesia that is observed with the same analgesic dosage of morphine. It has a dual mode of action which is mild opioid activity and inhibition of monoamine reuptake.

Pregabalin is a structural analogue of GABA and a derivative of gabapentin which has analgesic, anticonvulsant and anxiolytic properties. It acts through alpha-2-delta subunit of voltage gated calcium channels. These channels are present in spinal cord as well as the brain which decreases dorsal horn neuron hyperexcitability that is induced by tissue damage. Pregabalin also attenuates central sensitization which is generated by peripheral pain stimuli as evidenced by hyperalgesic experiment in human volunteers [1, 7].

In our study primary objectives were to compare duration of analgesia, hemodynamic parameters, adverse effects and sedation score between two groups. Secondary objectives were to compare total number of rescue analgesic used in first 24 hours of post operative period and intraoperative fentanyl requirement.

In our study we defined duration of analgesia as the time period starting from the administration of drug to time of first rescue analgesic. Although the duration of analgesia in our study was longer in Group P than in Group T, the difference wasn't statistically significant. Rajappa G *et al.* [7] did a study where they gave placebo, Oral pregabalin 75 mg and oral pregabalin 150 mg one hour prior to surgery and observed that duration of analgesia was 16.8 hrs in pregabalin 150 mg group. We observed that the duration of analgesia was 12.5 hrs in patients who were premedicated with oral pregabalin. Yadav G *et al.* [2] in their study using 75mg of oral tapentadol observed that time to first rescue analgesic was longer in Tapentadol group. Our results matched with both of these studies individually.

In our study we used visual analogue score (VAS) to assess postoperative pain. We observed that the VAS score was 4 and 3 at 0 hr and 24 hr after extubation in Group P. Joshi S *et al.* [1] also found less VAS scores in patients treated with Pregabalin at 6 hr, 12 hr, 24 hr and 36 hr after extubation. El Maksoud *et al.* [8] observed that VAS scores in Pregabalin premedicated patients at 0 hr, 1 hr, 2 hr, 6 hr, 12 hr and 24 hr after extubation were 5.5, 4, 3, 2, 2.5 and 2 respectively. Rajappa G *et al.* [7] also observed that VAS scores were less in pregabalin premedicated patients. Yadav G *et al.* [2] in their study observed lower VAS score in Tapentadol group. Our results match the abovementioned studies. Mitra S *et al.* [10] did a comparative study between tapentadol and tramadol where they observed that the VAS score in post operative period at 24 hr in tapentadol group was 1.49 ± 1.08, which is lower than our study results (VAS at 24 hr

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post extubation= 3). The difference in these findings may be attributed to the fact that in their study they premedicated the patients with oral tapentadol and paracetamol tablets, but in our study we premedicated Group T with only oral tapenatadol tablet.

In our study 39.9% patients in Group P required rescue analgesics and in study by Joshi S *et al.* [1] 44% of the patients in Group Pregabalin required rescue analgesic. El Maksoud *et al.* [8] observed that in first 24 hrs post-surgery, fentanyl requirement was less in patients premedicated with pregabalin. Yadav G *et al.* [2] observed that the number of patients requiring rescue analgesic was less in patients premedicated with tapentadol ($p < 0.001$). In the study by Mitra S *et al.* [10] 83.3% in tapentadol group required rescue analgesic whereas in our study 87.8% patients required some form of rescue analgesia. Our results matched with abovementioned studies individually although there was not any statistically significant difference in the number of doses of rescue analgesic required in the post operative period in both the study groups.

In our study intraoperative requirement of Fentanyl was less in Group P (178.48$\pm$21 mcg) than in Group T (201.21$\pm$17.98 mcg) and the difference was statistically significant. Yadav G *et al.* [2] observed in their study that intraoperative opioid requirement in Laparoscopic Cholecystectomy was 115$\pm$21.8 mcg in patients premedicated with tapentadol. This value is less than our results which might be because both the studies were conducted in different types of surgeries. The duration of laparoscopic cholecystectomy is less than that of cardiac surgeries. Although in study by Shah H *et al.* [5] there is no comparison in intraoperative opioid requirement, but patients who were premedicated with tapentadol required less dose of Fentanyl during induction. Joshi S *et al.* [1] observed in their study that intraoperative Fentanyl requirement was decreased in Group Pregabalin. The findings of both the studies were similar to our results.

In our study we compared haemodynamic parameters in both the groups. There was no significant difference in HR in preoperative period after administration of study drug between both the groups. During the surgery HR was comparatively less in Group T then Group P at 60 min, 180 min, 210 min and 240 min. We also found that post extubation at 0 hr and 3 hr HR was less in Group T than in Group P. In study by Joshi S *et al.* [1] they premedicated patients with oral pregabalin 150 mg with supplement of oral pregabalin 75 mg every 12 hourly for next 2 post-op days and found that heart rate was lowered in pregabalin treated patients as opposed to our observations. This difference might be because of use of increased dose of pregabalin in their study.

We observed less mean arterial pressure (MAP) in Group P than in Group T throughout the study period. In study by Joshi S *et al.* [1], MAP was lowered in pregabalin treated patients. Our results of pregabalin group matched this study. Shah H *et al.* [5] conducted a study where patients were premedicated with oral tapentadol 50 mg. They observed no increase in MAP after intubation in Group T. We also did not observe any significant change in MAP of patients in Tapentadol group in preoperative, intraoperative as well as post extubation period. This finding suggested that hemodynamic stability was achieved in Group P as well as Group T.

Common side effects with oral pregabalin are dizziness and common side effects of opioids are nausea, vomiting, headache and respiratory depression. In study by Joshi S *et al.* [1] they found that nausea and vomiting episodes were less in patients who were premedicated with pregabalin. Same results were in El Maksoud *et al.* [8] study. In

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study by Yadav G *et al.* [2], few patients had episodes of nausea and vomiting who were premedicated with Tapentadol, but it was not statistically significant. We found lower respiratory rate in Group T when compared to Group P in preoperative period after administration of drug and at 0 hr, 3 hr, 6 hr, 12 hr and 24 hr post extubation and the difference was statistically significant. But none of the patient had respiratory rate below 10 per min. Joshi S *et al.* [1] in their study did not observe any significant respiratory depression in patients premedicated with Pregabalin. Shah H *et al.* [5] observed that there was no respiratory depression in Group Tapentadol as well. We also observed sedation score after administration of study drug and post extubation. There was no significant difference in RASS scores preoperatively after administration of the study drug between both the groups. The sedation score was more in Group P than in Group T at 0 hr and 3 hr post extubation; the difference being statistically significant (p<0.05). In study by Joshi S *et al.* [1] only one patient in pregabalin group had moderate sedation (RASS score of -3), rest all patients had RASS score of -1(not fully alert but sustained eye opening). Rajappa G *et al.* [7] used RSS (Ramsay sedation score) to analyse sedation after premedicating with pregabalin, and just like our study, their study also showed more postoperative sedation in pregabalin group. Yadav G *et al.* [2] observed that there was no post operative sedation in patients premedicated with oral tapentadol. All the above-mentioned study just like us did not observe adverse effects while using pregabalin & Tapentadol premedication.

Conclusion

Administration of oral pregabalin as pre-emptive analgesic showed comparable duration of analgesia but better safety profile in terms of haemodynamic stability and less sedation as well as respiratory depression than oral Tapentadol. Oral pregabalin can be preferred as pre-emptive analgesic than oral tapentadol in patients undergoing cardiac surgeries.

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