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Comparison Of Continuous Epidural Infusion Of Fentanyl-Ropivaine And Tramadol-Ropivaciane In Management Of Postoperative Pain In Obstetric Patient Undergoing Lower Sectionceserean Section .

Dr Sandeep Kothari (Assistant Professor),Dr Anita Kothari (Mdpharmacology),Dr Gaurav Sharma (Associate Professor), Dr Salma(Professor)
Corresponding author :-Dr Dr Sandeep Kothari

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I. Introduction

The aim of postoperative analgesia is to provide subjective comfort with minimum side-effects, with early ambulation, faster postoperative anaesthetic recovery, better post operative analgesia ,earlier return of bowel function, decreased incidence of thromboembolic phenomenon. Pain scores of 4–6 on a 10 visual analog scale (VAS) are not unusual , patients experienced moderate to severe pain. Moreover, the severity of postoperative pain is higher, and it restricts the movement of diaphragm. This increases the incidence of respiratory complications (basal atelectasis, pneumonitis), hospital stay, cost, surgical morbidity, and mortality in such surgeries.

Tramadoland fentanyl both have analgesic and sedative properties when used as adjuvant in regional anaesthesia.Epidural ropivacaine&opioid derivative combination has better perioperative analgesia than intravenous analgesia.

Fentanyl is a potent lipid soluble synthetic μ-opioid agonist, with a rapid onset and short duration of action.Tramaol works by bindingto the μ-opioid receptor and as a serotonin–norepinephrine reuptake inhibitor (SNRI).Ropivacaine is a long-acting amide local anaesthetic agent and first produced as a pure enantiomer. It produces effects similar to other local anaesthetics via reversible inhibition of sodium ion influx in nerve fibres. Ropivacaine is less lipophilic than bupivacaine and is less likely to penetrate large myelinated motor fibres, resulting in a relatively reduced motor blockade. This study compare the effect of epidural tramadol, fentanyl and combination of both along with ropivacaine on post operative analgesia in lower sectioncesearian section patients

II. Methodology

This study was undertaken in 90 Obstetric patient undergoing lower sectionceserean section in Rajasthan University Of Health Sciences Hospital and College, Jaipur in the department of Anaesthesiology.

1) Selection criteria
✓ Age group 21-50
✓ Sex-female
✓ ASA status I & II
✓ Patients posted for Obstetric patient undergoing lower abdominal ceserean section.
2) Exclusion criterion
▸ Patients with haematological disease
▸ Bleeding or coagulation test abnormalities,
▸ Psychiatric diseases
▸ Diabetes, hypertension, IHD
▸ Impaired renal or hepatic function
▸ History of drug abuse
▸ Allergy to local anaesthetics of the amide type
▸ Local sepsis or deformity of spinal lumbar region.

Informed consent was obtained from 90 ASA physical status I and II patients scheduled to undergo cesarean section. Patients were randomized in a double-blind fashion to two treatment groups.

Patient' s base line blood pressure, pulse rate were recorded & an intravenous line was secured with 18 G cannula. After placing patient in sitting position an epidural puncture was started with 16-18 G Tuohy's needle through L_3-L_4interspinous space while maintaining all the aseptic precaution. Epidural space was identified by loss of resistance technique which was confirmed by injecting 3ml test drug, ruling out accidental subaracnoid tap or

intravascular injection. All patients after placing epidural catheter in L3-4 level given spinal anaesthesia with 2.4 ml of .5% bupivacaine heavy in L4-5 space.

Patients were divided in 2 groups ,in RF and RT ,given epidural infusions at 5 ml/hr with fentanyl 10 µg/ml and tramadol0.5mg/ml both withropivacaine 0.1 %,

A continuous epidural infusion of the study drug was started immediately postoperatively at a rate of 5ml/hr through a infusion pump. Patients needing additional pain medications for pain relief were given IV Diclofenac 75 mg .

Patients were encouraged to ambulate and those requiring treatment for nausea were given IV Ondansteron8mg . All patients had urethral catheters in place during the first postoperative day. The epidural catheters were withdrawn after 24 hours at the conclusion of the study. The postoperative study recorded included assessment of pain relief according to a visual analog scale, the amount and number of supplemental IV Diclofenac 75 mg received, ambulatory status, the number of IV Ondansterone 8mg injections. Any incidence of apnea or mental status changes associated with respiratory depression were also noted.

Data collection started in the recovery room after initial drug injection and continued every 4 hours thereafter for 24 hours.

Respiratory rates, vital signs,were assessed. Pain scores and respiratory rates were analyzed by two-way ANOVA with one repeated measure.

The remainder of the data were analyzed using Fischer's exact test. A *P* value of 0.05 was considered statistically significant.

This is a Prospective, Randomized, Double blind study.Statistical analysis was done using SPSS Software.. P value <0.05 was considered statistically significant. Data are presented as Mean value ± SD and percentage as indicated.

III. Result:

Study was undertaken in 90 patients who were undergoing lower abdominal cesearieansection , women participated in the study:45 patients in the fentanyl-ropivaciane group and 45 in the tramadol-ropivacainegroup.

There was no significant difference in demographic characteristics between the groupsie there is no significant differences between the two groups in age, race, socioeconomic status,weight, or height.*(Table 1)*

Time to ambulation was faster in fentanyl group as compared to tramadol group. Urinary retention could not be evaluated due to presence of urethral catheters There were no case of respiratory depression *(Table 2).*

The degree of analgesia achieved was equal in both the groups. All patients expressed satisfaction with the degree of analgesia.

(FIGURE 1) (VAS SCORE).

Although the need for supplemental iv diclofenac was more in RT ie 12 % as compared to 9 % of RF but the difference was non significant . All patients expressed satisfaction with the degree of analgesia.(FIGURE 2)

The incidence of nausea was significantly lower in the RF Grp (8.8%) as compared with the RT Grp (44%). FIGURE 3 (PONV)

Table 1

Parameters	Group RF	Group RT	P VALUE
Age in years(mean ±SD & range)	34.12±11.22 (20-40)	35.17±11.17 (20-40)	>.5
Weight in kg(mean ±SD & range)	54.17±5.46 (40-68)	55.34±4.87 (40-68)	>.5

Table 2

TIME PERIOD (HRS)	0-4 HRS	4-8 HRS	8-16HRS	16-24HRS
RESPIRATORY RATES/(min)				
R+F	19.5±5.6	22±5.8	21.9±4.9	21.6±4.4
R+T	20.4±4.6	19±4.4	20.7±3.9	22.2±5.1
AMBULATION%				
R+T	18	36	48	68
R+F	25	42	58	74

FIGURE 1 (VAS SCORE)

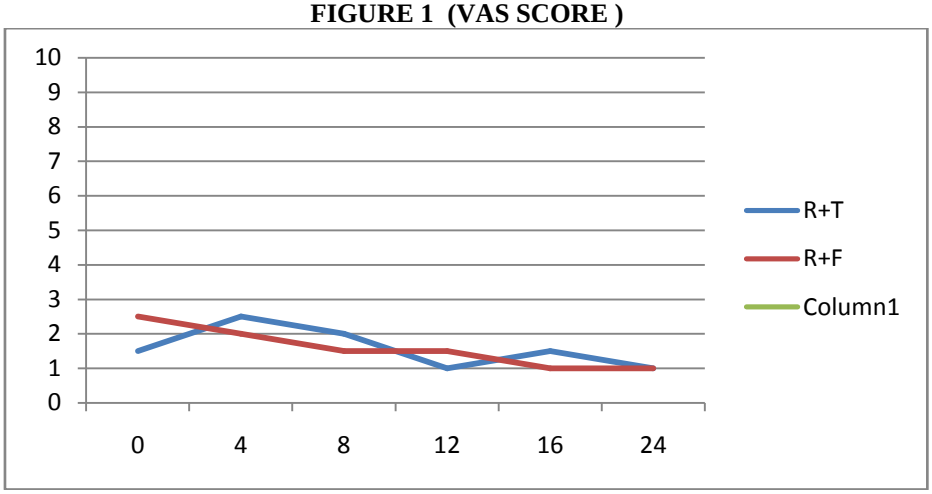


Figure 2. Percentage of patients needing supplemental ivDiclofenac injections at each of the 4-hour postpartum intervals; 12% of RTgrp and 9% of RF grp required supplemental iv diclofenac

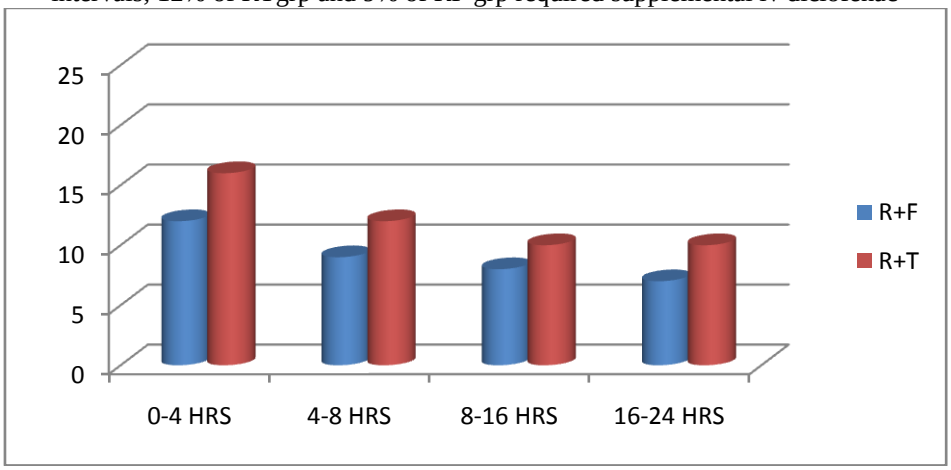
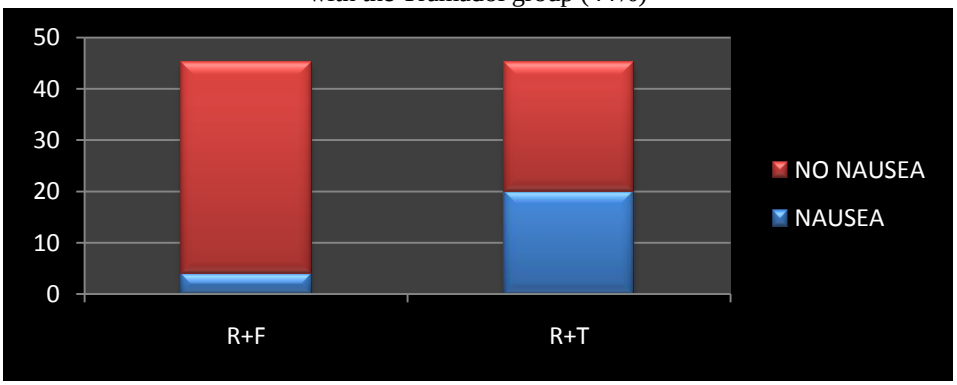


FIGURE 3 (PONV) The incidence of nausea was also significantly lower in the fentanyl group (8.8%) as compared with the Tramadol group (44%)



IV. Discussion

Our study demonstrated that the degree of analgesia achieved was equal in both the groups. All patients expressed satisfaction with the degree of analgesia of analgesia and the incidence of side effects were also very less as compared to bolus injection. In our study, a continuous infusion techniqueprovides the opportunity to observe significant clinical differences between epidural fentanyl and tramadol. The present study also supportsthe clinical

impression that combinations of narcotics with local anesthetics can provide excellent pain relief. The incidence of nausea was 80% less with epidural fentanyl than with epidural tramadol. The continuous infusion technique also obviates the need for repetitive bolus injections, while providing a constant level of analgesia.

With our continuous epidural infusion technique thenumber of molecules of narcotic within the CSF at any one time is less than that with bolus epidural injections,. Because respiratory depressionis a dose-dependent phenomenon this study demonstrateda reduction in the side effects with a continuousepidural infusion as compared with a bolustechnique in other studies.The safety of epidural narcotic infusions was alsodemonstrated in the present study: no patient sufferedfrom clinically significant respiratory depression. Conclusion, although the epidural infusion of fentanyland tramadol has equal analgesic action but epidural fentanyl hasadvantages over epidural tramadol for lesser degree of ponv and early ambulation .

V. Conclusion

Our study demonstrated that the degree of analgesia achieved was equal in both the groups,epiduralfentanyl has advantages over epidural tramadol for lesser degree of ponv and early ambulation. There was no incidence of apnea or mental status changes associated with respiratory depression

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