

Comparision of Addition of Clonidine to Epidural Tramadol For Post-Operative Analgesia



Medical Science

KEYWORDS : Tramadol, Clonidine, Post operative

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ABSTRACT

Introduction: Epidural opioid administration is one of the most common technique for post operative pain relief since it has long lasting segmental analgesia, no sensory or motor loss no autonomic blockade . When used as adjuncts to opioids, they decrease adverse effects, and increase the quality and duration of analgesia.

Aim: To assess and compare analgesic effect of epidural Tramadol(T) used alone, and the combinations of Tramadol – Clonidine(TC).

Material and Method: After Ethic’s Committee approval and patient informed consent, Prospective, randomized and double-blind study was done, in which 100 patients of ASA 1 & 2 of age between 30 to 60 yrs were included. Patients were divided 50 each in to T and TC group.

Result: Duration of analgesia was similar in TC significantly longer than in the T group group TC patients displayed a significant increase in sedation scores and decrease in blood pressure and heart rate when compared with other groups . Nausea scores were high in both the T and TC group.

Conclusion: Combination of tramadol with clonidine is better choice than tramadol alone for post operative epidural analgesia.

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opioid withdrawal symptoms by reducing the sympathetic nervous system response such as tachycardia and hypertension⁶ . Clonidine, which is an alpha₂ adrenergic agonist, has an anti-nociceptive effect on a wide dynamic range of neurons and receptors. Although they cannot provide sufficient analgesia by themselves, when used as adjuncts to lowdose opioids, they decrease adverse effects, and increase the quality and duration of analgesia⁷. The present study was conducted to to assess and compare analgesic effect of epidural Tramadol used alone, and the combinations of Tramadol - Clonidine. Onset & duration of analgesia with different combinations, total Tramadol consumption over 24 hours, adverse effects (sedation, nausea, vomiting) and hemodynamic changes.

Material and Method:

After obtaining approval from the local Ethics Committee and written informed consent, 100 patients aged 30-60 yr, ASA physical status I and II, scheduled for open donor nephrectomy were selected for this prospective, randomized and double-blind study. All patients were taken into the operating room Intra operative monitoring ECG; NIBP; SpO₂; ETCO₂ were done. After completion of surgery epidural catheter inserted at the L3-4

interspace. Patients were randomly assigned to two groups ^{Group} T : Inj. Tramadol 1.5 mg/kg diluted in 10 ml of distilled water. Group TC : Inj. Tramadol 1.5 mg/kg plus inj. Clonidine 150 µg diluted in 10 ml of distilled water. The epidural injection & post operative assessments was done by an investigator blinded to study groups. Pain by VAS Score (0 – 10), Sedation score recorded on four point scale, nausea & vomiting score Vitals : Pulse, BP, RR, SpO₂ At 5, 10, 20, 30min, 1, 2, 3, 4, 5, 6, 8, 12, 16, 20 & 24 hours after epidural injection. In Statistical analysis All data were expressed as Mean ± SD, The two groups were compared using (ANOVA) followed by a student’s t test for parametric data and P value of < 0.05 was considered significant.

Result:

The two groups of patients were similar with respect to demographic data, ASA physical status and duration of surgery shown in table 1.

Table 1: Distribution of Age, weight, Height, and Duration of surgery (demographic date)

	Gropup T(n=50)	Group TC(n=50)
Age(yrs)	41.70±11.32	43.2±8.21
Body wt.(kg)	61.18±10.13	63.22±9.12
Height(cm)	167.9±6.93	164±7.88
Sex(M:F)	15:35	12:38
ASI(I/II)	41/9	38/12
Duration of Surgery(min)	179.92±20.10	174±14.57

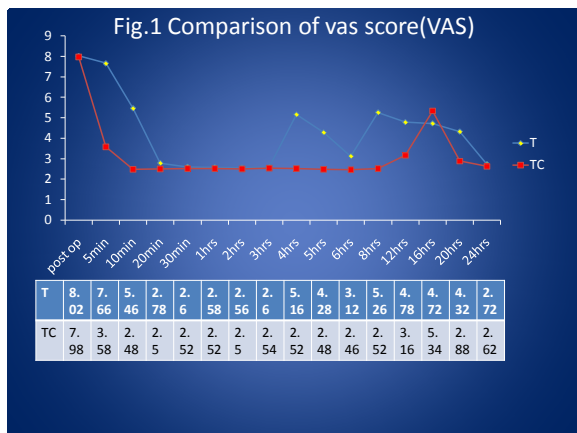
Onset of analgesia was significantly faster in TC groups as compared to T group (p < 0.05) which was 16.2±5.67 and 6.1±2.09 in T and TC group respectively.

Duration of analgesia of 1st dose was less in group T as compared to group TC.(T 4.32±0.86 and TC 16.04±2.56)

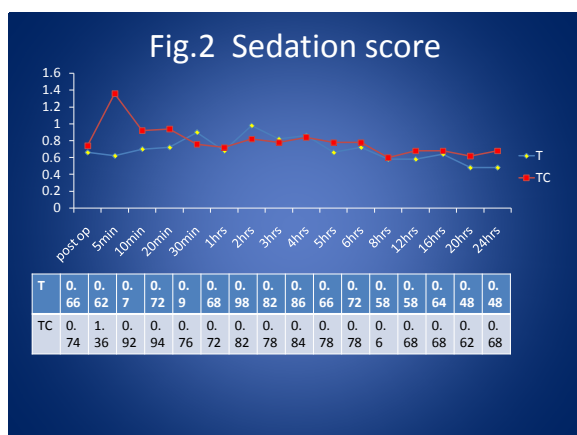
Number of doses were 3.62±0.67 in T and 1.96±0.2 in TC so number of doses of analgesic solution used in 24 hours were significantly lower in group TC (p < 0.05).

Total tramadol consumption was significantly lower in TC (184.8 ± 32.65) groups as compared to T group (339.3 ± 85.97).

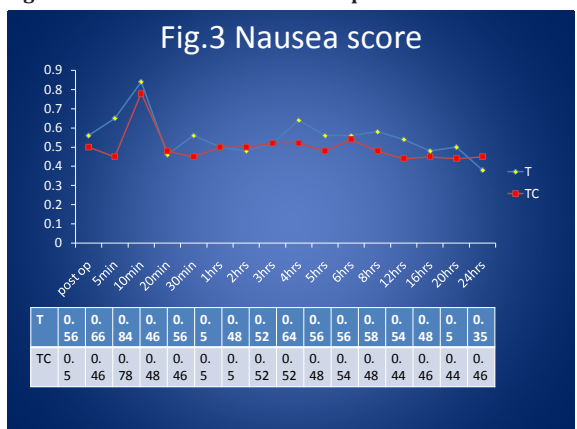
Comparison of VAS score, Sedation score, Nausea score, mean heart rate and mean arterial blood pressure were shown in Figure 1 to 5 respectively.



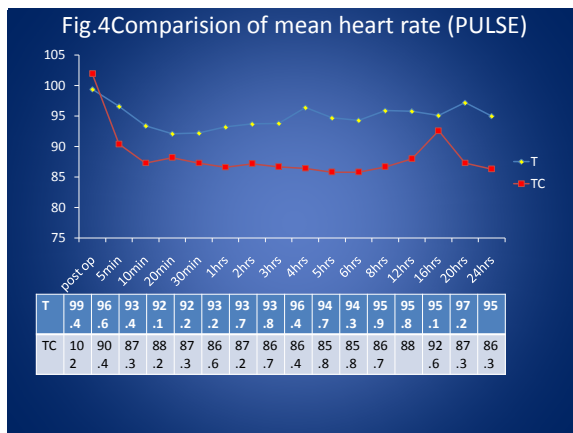
VAS was significantly higher in T group, except at 16 hours, when VAS score were comparable in all two groups.(P< 0.05)



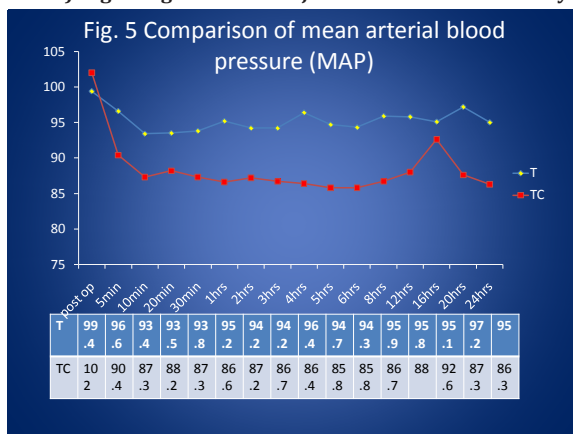
Group T patients did not show any sedation, however group TC patients had increased sedation scores at 5, 10 and 20 mins after injection (p < 0.05). There was no statistically significant difference at other time points.



Patients in group T and TC had higher nausea scores at 10 minutes (p < 0.05).



Group TC showed statistically significant drop in heart rate (p < 0.05) beginning 5 min after injection until the end of study.



Statistically significant fall in blood pressure (p < 0.05) in TC group starting from 5 min after injection and which was seen till end of the study.

Discussion:

Onset of analgesia was faster & duration of analgesia was also longer in TC groups than T group. In our study it was 16.2±5.6 and 6.1±2.09 for T and TC respectively while 16.8±2.1(T) and 8.7±1.2(TC) in study of Gurses et al⁸ and 13±6(T), 13±3(TC) in study of Rostaing et al⁹. So it is similar to our study. Duration of analgesia of 1st dose(hr) is also longer in those study which is also similar to our study. No of doses and total Tramadol consumption Decreased in TC group compared to T group, The sedation scores were higher in TC group as compared to T groups as clonidine has inhibitory effect on locus coeruleus by inhibiting adenylyl cyclase, Heart rate and blood pressure were significantly lower in TC group but did not require any intervention. Comparable with studies of *Gurses et al⁸*; *Rostaing et al⁹* and all results are similar.

So to conclude that Combination of tramadol with clonidine is better choice than tramadol alone for post operative epidural analgesia due to early onset of action ,longer duration of analgesia,less requirement of additional doses,better patient comfort,better hemodynamically stable and less & easily treatable side effects

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