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Original Research Article

The Effect of Intravenous Tramadol Administration on Postoperative Pain Relief Post Caesarean Section

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Abstract

Background: Tramadol administered intravenously has been demonstrated to decrease post operative pain. In this study, the effect of intravenous tramadol administration on pain relief after caesarean section has been studied.

Methods: 100 Women following elective/emergency caesarean section were included and were divided into two groups, 50 in each. Group A received IV 100ml normal saline infusion over 15-20 minutes. Group B received 50 mg Tramadol intravenous infusion (1ml ampule in 100ml NS over 15-20 minutes). Post caesarean pain was assessed by visual analogue scale and by examining the patient at start of recruitment and 15mins, 1hour, 2hours, 3hours and 4hours post section. Drug was administered 2 hours post section or 4 hours post spinal (considering average effect of spinal anaesthesia as 2 hours).

Results: Mean pain intensity assessed on VAS was significantly better for tramadol group compared to placebo group at all the time points. Maximum fall in pain intensity score was also significantly superior in the tramadol group as compared to the placebo group. No patients required rescue medication in Tramadol group.

Conclusion: Tramadol has more pronounced analgesic effect. Thus, Tramadol can be considered as an effective analgesic in treatment of post operative pain in post caesarean patients.

Keywords: Post caesarean, Pain Relief, VAS, Tramadol.

Introduction

Pain is the most common clinical complaint and causes considerable human suffering. Postoperative pain tends to be underestimated, is generally treated inadequately, and therefore, is not assessed with regard to how it harms the patient and impedes successful recovery. The best postoperative pain regimen is one that offers broad analgesic coverage, is easy to administer, and is safe. The search for appropriate drugs to treat patients with moderate-to-severe pain has led to the development of tramadol hydrochloride. It is a synthetic drug that offers interesting

characteristics. The drug is a centrally acting amino cyclohexanol analgesic with complementary mechanisms including activation of μ- opioid receptors and inhibition of norepinephrine and serotonin reuptake. There is less evidence of drug dependence, respiratory depression and gastrointestinal disorders. Therefore, a randomized, double-blind, placebo controlled clinical study was undertaken to compare the effect of intravenous tramadol with that of placebo on postoperative pain after caesarean section. Aim of this study was to study the effect and safety of intravenous Tramadol on postoperative pain in post caesarean patients.

Method

The study was a hospital based, prospective, double blind, placebo controlled study, conducted during the period of one year (April 2022 – March 2023) in the Department of Obstetrics and Gynecology at College of Kempegowda institute of Medical Sciences- a tertiary care center located in Bangalore, Karnataka.

Women following elective/emergency caesarean section were included in the study and were divided into two groups on post operative day zero. GROUP A (Placebo): Received 100mL of normal saline infusion over 15-20 minutes). GROUP B (Tramadol): Received 50 mg Tramadol intravenous infusion (1ml ampule in 100ml NS over 15-20 minutes.

A) Detailed history was taken regarding - Known allergies, Past medical and surgical history.

B) Clinical Examination- GPE, Height, weight and BMI, Abdominal examination, vaginal examination.

C) Time of delivery.

D) Post caesarean pain was assessed by visual analogue scale and by examining the patient at start of recruitment, 1hour, 2hours, 3hours and 4hours post section. Drug was administered 2 hours post section or 4 hours post spinal (considering average effect of spinal anaesthesia as 2 hours).

E) Side Effects - Nausea, vomiting, Skin rashes, Injection site reactions, Drowsiness, Lack of energy were noted after drug administration till 4 hours post caesarean.

Inclusion Criteria:

- Women undergoing caesarean section (Elective/ Emergency)
- Patient with spinal anaesthesia (Bupivacaine/Ropivacaine)

Exclusion Criteria:

- Epidural analgesia/ general anaesthesia/ combined anaesthesia.
- Hypersensitivity reaction to Tramadol
- Hepatocellular insufficiency/epilepsy.
- Use of any other analgesia before recruitment in the study following spinal anaesthesia or immediately after shifting to post operative ward after caesarean section.

Results

In this study, mean age in placebo group was 26.84 years with a range of 19 to 40 years. In tramadol group, mean age was 26.32 years with a range of 19 to 37 years and there was no statistical significance. (p value = 0.63)

In Placebo group, 44% were primigravida and 56% were multigravida.

28% had underwent preterm sections, 72% were term sections.

24% were elective sections and 76% were emergency.

In Tramadol group, 48% were primigravida and 52% were multigravida.

26% were preterm and 74% were term sections.

80% were emergency sections and 20% were elective sections.

All these variabilities were not statistically significant.

Mean caesarean duration in both PLACEBO and TRAMADOL group was around 71.20 mins and 70.60 mins respectively. P value was 0.60 and this was not statistically significant.

Table 1: demographic profile of study population

Variables		Group A (Placebo)	Group B (Tramadol)	P Value
Age		26.84±4.97	26.32±4.53	0.63
Parity	Primi Multi	22(44%) 28(56%)	24(48%) 26(52%)	
Gestation Age	Preterm Term	14(28%) 36(72%)	13(26%) 37(74%)	
LSCS	Emergency Elective	38(76%) 12(24%)	40(80%) 10(20%)	
Duration of Surgery		71.2±12.06	70.60±11.32	0.60

In both the groups, VAS score was measured immediately after shifting to postoperative ward, 1 hour after shifting. Drug was administered 2 hours after shifting to the ward (2 hours post section or 4 hours post spinal) Mean vas score before drug administration was calculated.

There was no statistical significance between the mean VAS score of placebo and tramadol group prior to drug administration. (p value = 0.131). Later mean VAS score of each group was calculated just after drug administration, 1 hour and 2 hour following drug administration (post section). Just after drug administration, mean VAS of placebo group was 5.59 and tramadol was 5.09 which was statistically significant. (p value = 0.009). After 1 hour of drug administration, Mean VAS score of placebo group was 5.00 and that of Tramadol group was 4.43. VAS score of tramadol was comparable to that of placebo and was statistically significant. (p value = 0.0001). After 2 hours of drug administration, Mean VAS score of placebo group was 4.36 and that of tramadol group was 4.0 which was statistically significant. (p value = 0.035.

VAS	Placebo Group	Tramadol Group	P Value
Before drug administration	6.90±0.49	6.70±0.53	0.131
2 hours post section (immediately after drug administration)	5.59±0.73	5.09±0.68	0.009
3 hours post section (1 hour post drug administration)	5.00±0.68	4.43±0.52	0.001
4 hours post section (2 hours post drug administration)	4.36±0.51	4.09±0.42	0.035

Adverse Effects	Group A(Placebo)	Group B(Tramadol)
Nausea	5(10%)	10(20%)
Vomiting	1(2%)	3(6%)

Drowsiness	-	1(2%)
Rashes	-	-
Blurred Vision	-	-
Respiratory Depression	-	-

Discussion

Failure to treat post operative pain may lead to high incidence of morbidity. The present study was designed to study effect of intravenous tramadol on post operative in patients who had undergone caesarean section. In our study we found that intravenous Tramadol had a pronounced effect on postoperative analgesia. Significant post operative analgesia was experienced at 1 hour after administration of IV tramadol.

Study conducted by Sahmeddini et al showed that local infiltration of tramadol was found as an effective wound pain relief when compared with local infiltration of bupivacaine in a study conducted with 98 patients.

Study conducted by Sahar Siddik Sayyid et al show that epidural administration of 100mg Tramadol provided adequate postoperative analgesia without respiratory distress in patients after caesarean delivery.

Another study conducted by Zhouxi Wu et al showed that tramadol was an effective post caesarean analgesia after elective caesarean section which ameliorated postpartum depression.

Study conducted by Ismail et al concluded that addition of Paracetamol and NSAIDs potentiates the opioid effects, decreases its consumption, and reduces the side effects when systemic and neuraxial opioids are administered for post-caesarean delivery analgesia.

Study conducted by Kumari UR et al showed that deployment of IV Paracetamol as a suitable alternative to IV Tramadol for postoperative pain relief in caesarean section and we found that pain relief was adequate in both the groups. However more maternal side effects like nausea, vomiting, dizziness, headache dryness of mouth and breathing difficulty were found in Tramadol group. In the present study, 20% patients had nausea, 6% developed vomiting and 2% had drowsiness. None of the patients had rashes or showed respiratory depression.

Conclusion

Tramadol is a safe, efficacious, cheap, easy to administer, easily available drug with very few minor side effects. The results of this study indicate administration of tramadol provides an effective and well tolerated relief from post operative pain.

References

1. Williams M, Kowaluk EA, Arneric SP. Emerging molecular approaches to pain therapy. J Med Chem. 1999; 42:1481-500.
2. Sahmeddini MA et al, local infiltration of tramadol vs bupivacaine for post caesarean section pain control, Iran J Med Sci. May 2017; 42(3).
3. Siddik-Sayyid et al. Epidural Tramadol. Can J Anesth. 1999; 46(8): 731-735.
4. Wu et al. Tramadol PCIA Ameliorates PPD; Frontiers in Medicine. www.frontiersin.org; May 2021; Volume 8: Article 679159.
5. Ismail, et al.: Postoperative pain management of cesarean section patient Journal of Anesthesiology Clinical Pharmacology. January-March 2012; 28(1).
6. Kumari UR et al. Int J Reprod Contracept Obstet Gynecol. 2016 Dec;5(12):4285-4289.