



ENHANCING VAGINAL DELIVERY BY ALLEIVIATING PAIN-OUR EXPERIENCE

Dr. Nazreen Siddiqui

Dr. Shraddha Paliwal\*

\*Corresponding Author

ABSTRACT

**Background:** Anticipating a baby is certainly one of the most blissful event in one's life, so it is essential that labour and delivery are secure and nontraumatic. **Method:** This is a Descriptive Observational study conducted in labour room of NSCB MCH Jabalpur on 300 nullipara in labor who fulfilled the inclusion criteria, were given 100mg Tramadol hydrochloride intramuscularly. **Results :** In 300 nullipara before giving the drug , 4.3% had Grade 3 and 95.7% had Grade 4 pain, after administration of Tramadol hydrochloride intramuscular there was reduction of pain from grade 3 and 4 by 98.3%(Grade 2) and all the patient continued with grade 2 pain in second stage and delivered vaginally and only 17 patients delivered by LSCS. Minimal side effects of nausea and vomiting seen in 13 patients. **Conclusion:** Injection Tramadol hydrochloride 100mg intramuscular is safe and effective labour analgesic in nullipara with minimal side effects. So, in developing nations ,where availability of facilities is the main limiting factor, Injection Tramadol hydrochloride can be considered as effective alternative for labour analgesia.

**KEYWORDS :** Labour analgesia, Nullipara, Tramadol hydrochloride, LSCS

INTRODUCTION

"Anticipating a baby is certainly one of the most blissful event in one's life,so it is essential that labour and delivery are absolutely secure and enjoyable to the greatest heights."Labor pain is vastly subjective reciprocation to varying stimuli that are peculiarly perceived and elucidated.

Cortical responses to pain and anxiety during labour are multifactorial and it may be affected by maternal assumptions for childbirth,her age and preparation through education,presence of emotional support,and other factors<sup>1</sup>.

Giving birth is designated as principal instance in woman's life,labour pain being racking pain ever confronted by her during the process<sup>2</sup>.

The American college of obstetrics and gynecologist(2002) has stated that "women's request for labor pain relief is sufficient medical indication for its provision"<sup>3</sup>

An ideal analgesic should be easy to administer ,should not affect the concious level of the parturient,provide reversible, predictable,and good analgesia.It should not interfere with uterine contractions and should allow to parturient to ambulate atleast during early stages of labour.It should not be toxic to mother and fetus and not produce cardiorespiratory depression in fetus<sup>4</sup>.The method must have no tocolytic action and should not delay labour<sup>5</sup>.

Tramadol hydrochloride ,a centrally acting weak analgesic opioids.It is a weak opioid agent,which has an analogous analgesic efficacy to meperidine(pethidine)<sup>6</sup>.It cause less neonatal respiratory depression at usual doses of 1-2mg/kg body weight and less sedative effect. The onset of action is within 10min of intramuscular administration and the duration lasts for approximately 2-3hrs.Tramadol has high placental permeability but neonate possess complete hepatic capacity to metabolize it.Tramadol hydrochloride is inexpensive ,no special monitoring is required.The aim of this study is to assess the safety and efficacy of intramuscular Tramadol hydrochloride as labor analgesia.

METHODOLOGY

300 nullipara selected according to inclusion and exclusion criteria

Inclusion criteria

All Nullipara women presenting with.  
Term pregnancy  
Singleton live fetus  
vertex presentation  
In active phase of labour with engaged head for vaginal delivery

Exclusion Criteria

Parturients with any associated history of medical disorders.  
Any associated obstetrical complication with multiple gestation , APH, Placenta previa, IUGR, CPD, epilepsy, psychiatric disorders  
History of hypersensitivity to drug.

All nulliparous women were explained about the study and informed consent was taken.

Once the patient was in active phase of labour and 50-60% effaced with good uterine contractions vitals taken and primary investigations done and pain score was noted before administering the drug.Injection Tramadol hydrochloride 100mg intramuscular was given as a single dose. Pulse rate, blood pressure,respiratory rate, fetal heart rate were recorded.Patient was advised to inform as soon as pain begins to decrease in intensity or even if there is no pain relief at all after 30minute of injection.

Assessment of pain relief

It is almost impossible to comprehend the degree of pain and agony women endure during delivery. It's a challenge to measure pain.Various methods exists but none, which can guarantee pain measurement conclusively. During the course of this study pain relief after administration of the drug was analyzed and recorded using the rupees scale.

Rupees Scale

The degree of pain relief was expressed as percent of the whole rupee. The Degree of pain was graded as shown below:

- Grade -I No pain .....0
- Grade -II Mild pain but comfortable .....25%
- Grade -III Moderate pain with discomfort .....50%
- Grade -IV Maximum pain / severe pain ..... ≥ 75%

**RESULTS**

**Demographic data of parturient women**

Demographic profile	Mean±SD
Age(years)	21.66±2.08
Gestational age(weeks)	38.4±.97
Systolic B.P(mmHg)	114.11±7.09
Diastolic B.P(mm Hg)	75.19±4.45
Pulse rate(beat/min)	79.51±5.35

**TABLE 1 AGE DISTRIBUTION**

Age in years	Study
< 20	49(16.3%)
20-24	229 (76.3%)
25-30	22 (7.3%)

**TABLE 2 - PAIN IN STAGE I BEFORE AND AFTER DRUG**

Degree of Pain	Stage I Before Drug	Stage I After Drug
Grade I	0	5(1.7%)
GRADE II	0	295 (98.3%)
GRADE III	13 (4.3%)	0
GRADE IV	287(95.7%)	0

**Table 3 Total Duration of Labour**

Total Duration Of labour (min)	No of Patients	Percentage
≤180	12	4
181-240	117	39
241-300	120	40
301-360	42	14
> 360	9	3

**TABEL 4 MODE OF DELIVERY**

Mode of delivery	Study Goup
NVD	283 (94.3%)
LSCS	17 (5.7%)
Instrumental ( Forceps, Vacuum)	0

**TABLE 5 NEONATAL OUTCOME BASED ON APGAR SCORE**

APGAR SCORE 1MIN	STUDY
3-5	7 (2.4%)
6-7	157 (52.3%)
9-10	136 (45.3%)

  

APGAR SCORE 5MIN	STUDY
3-5	0
6-7	2 (0.7%)
9-10	298 (99.3%)

**DISCUSSION**

According to ACOG guidelines 2003 request for pain relief by mother is sufficient medical indication for its use<sup>7</sup>.Relief of pain during childbirth has been of great interest to both physician and public through ages. It is hard to compare the analgesic effect of drugs because it depends on subjective evaluation.

Present Study indicated that Tramadol hydrochloride is an effective analgesic that can be of use for treatment of intense acute and chronic pain like of obstetric pain and post operative pain. Tramadol hydrochloride is a narcotic drug introduced in GERMANY. It is available throughout world. Tramadol hydrochloride is a weak opioid and analgesic, it interacts with mu, delta, kappa receptors and exhibits purely agonist effect.

Tramadol hydrochloride in 100mg dose can be administered intramuscularly and has an analgesic effect equivalent to 100mg pethidine or 10mg morphine given intramuscularly<sup>10</sup>.

**ONSET OF ANALGESIA**

In present study time required for onset of drug action was 17.68±2.96minutes.

It was 15.89±6.61minutes in study by Nagaria Tripti(2006) et al<sup>10</sup> and in study by Sudha Patil(2012)<sup>12</sup> it was 15.35±2.65minutes.

Similar Study done by Meena Jyothi(2006) et al<sup>3</sup> they reported onset of analgesia was 10minutes and in study by Asha Rani(2016) et al<sup>14</sup> it was 16.27minute

**COMPARATIVE ANALYSIS OF PAIN RELIEF**

Degree of pain relief	Thakur Ratna 8	Nagaria Tripti10	Sudha Patil12	O Kuti 11	Asha Rani 14	Present Study
No relief	14	9	12	3.1	0	0
mild relief	16	16	45	66	12	0
Moderate satisfactory relief	55	38	38	30.9	49	295
Compleat Relief	15	37	13	13	39	5

**COMPARATIVE ANALYSIS OF MODE OF DELIVERY**

Mode of delivery	Thakur Ratna etal8	Nagaria Tripti etal10	Sudha patil 12	O Kuti 8	Asha Rani14	Present Study
FTVD	98%	93%	90%	88.1%	100%	94.3%
LSCS	0	3%	4%	9.5%	0	5.7%
Instrumental Delivery	2%	4%	6%	2.4%	0	0

In present study 94.3% had vaginal delivery and 5.7% had lscs.

Mode of delivery was comparably good enough to other standard studies in which after use of injection Tramadol hydrochloride incidence of operative deliveries had decreased.

**COMPARATIVE ANALYSIS OF NEONATAL OUTCOME**

Neonatal condition	Thakur Ratna8	Asha Rani14	Present study
Good	98%	100%	97%
Distress	2%	0	3%

In present study neonatal outcome was good in 97% and only 3% neonates had reported distress at birth.

**COMPARATIVE ANALYSIS OF APGAR SCORE**

Mean Apgar Score	Thakur Ratna8	Meena Jyoti Singhal Prabha etal9	Present study
1 min	7.02±0.60	>7	7.09±0.92
5 min	9.05±0.88	>7	8.67±0.48

Neonatal condition at delivery assessed by apgar score was as good as compared with other standard studies.

**COMPARATIVE ANALYSIS OF SIDE EFFECTS**

Side Effects	Thakur Ratna etal8	Nagaria Tripti etal10	Present study
Nausea	7%	11%	2.7%
Vomiting	3%	4%	1.7%
Drowsiness	2%	1%	0%
Palpitation	1%	0	0
Hypersensitivity	0	0	0
Dry mouth	10%	0	0

In present study 2.7% women had nausea and 1.7% had vomiting. Minimum side effects were seen in our patients with the use of injection Tramadol hydrochloride.

This observation shows superior safety profile of Tramadol hydrochloride as labour analgesia with minimal side effects.

## CONCLUSION

Adequate analgesia during labour is beneficial to mother and has a positive influence on the course of labour and the newborn child, thus making obstetrical analgesia an essential part of modern obstetrics.

Labour analgesia causes significant reduction in duration of labour and injection delivery interval.

“For all happiness mankind can gain is not in pleasure but in rest from pain” John Dryden.

## REFERENCES

1. Williams Obstetrics; 23rd edition; obstetric anaesthesia chapter 19; pg444-463; Normal labour and delivery; chapter 17; Pg37;382-390.
2. Rudra A article 3:1 of 2 update in anaesthesia
3. Williams Obstetrics; 23rd edition; obstetric anaesthesia chapter 19; pg444-463; Normal labour and delivery; chapter 17; Pg37;382-390.
4. Ian Donald Practical problems, analgesia and anaesthesia in pregnancy 6th edition.
5. Lan Lee TS, Tat L. Pain relief in labour-The management of labour. S. Arulkumaran, Ratnam SS, Bhaskar Rao Ed
6. Singh S, Mathur V, Srivastava U, Pandey DFN, Gupta N. Comparative evaluation of efficacy of tramadol with pentazocine for labour analgesia and their effects on fetal outcome. *J. of Obstet & Gyn. Of India*, 2001; 51(2):55-57.
7. Sunil TP and ya; Labour analgesia; recent advances. *Indian Journal of Anaesthesia*: 2010 sep-oct; 54(5); 400-408.
8. Thakur Ratna, Patidar Rekha. Comparative study of transcutaneous electrical nerve stimulation (TENS) and tramadol hydrochloride for pain relief in labour. *J. Obstet. Gynecol. Ind.*, 2004 Jul-Aug; 54(4):346-350.
9. Meenajyoti, Singhal Prabha, Choudhary Devika, Programed labor, *J. Obstet. Gynecol. India* Vol. 56, No. 1: January/February 2006, 53-55.
10. Nagaria Tripti, Acharya Jyotsna; Pain relief in labour-tramadol versus pentazocine. *J. Obstet. Gynecol. India* Vol 56, no 5 sep/oct 2006:406-409.
11. OKuti, AFFAponile, ABAdeyemi, ATowolabi; pain relief in labour; A randomized control trial comparing pentazocine with tramadol; *Nepal Journal of obstetrics and gynaecology*; vol3, no11; 2008.
12. Sudha Patil, tramadol analgesia in labour, mar 2012, *international journal of pharbiomed* 2012, 3(1), 49-51.
13. M. Suguna, Shobha Rani scholars journal of applied medical sciences (SJAMS) 2015; 3(6c):2347-2350.
14. Asha Rani KNH. Effect of intramuscular tramadol hydrochloride as a labour analgesic in primigravidae. *Int. J. Reprod. Contracept. Obstet. Gynecol.* 2016; 5:615-9
15. Pakistan Armed Forces Medical Journal 2010; tramadol in combination with low dose Bupivacaine for painless epidural.
16. Zahid akhtar Rao, Abeera Chaudri; effect of tramadol in the duration of labour; *journal of college of physicians and paediatricians*.