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*RESEARCH ARTICLE*

# ROLE 0F INTRAMUSCULAR TRAMADOL IN LABOUR ANALGESIA.

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*Abstract*

**Background:** Several methods have been developed for labour analgesia out of which use of intramuscular analgesia is emerging as a good choice.
Objective: To study the role of intramuscular tramadol in labour analgesia.
**Materials and methods:** In this study 100 pregnant women over a period of one year , with preselected inclusion and exclusion criteria were studied , during active stage of labour. Degree of pain relief , mode of delivery and maternal and perinatal outcome , after administration of intramuscular tramadol , was noted.
**Results:** Mean age of patients in the study was 26.5±4.63 years. 58% had moderate pain , 16% mild pain and 26 % had no pain after the drug was administered.78% delivered by normal vaginal delivery ,12% by caesarean section and 10% by instrumental delivery. Nausea and vomiting was most frequent (22%) maternal side effect of tramadol. Mean apgar score at 5 minutes of birth was 7.2±0.98
**Conclusion:** Intramuscular tramadol is a significant pain reliever during labour with minimal side effects.



## Introduction:-

The process of labour is a painful one , the severity of which is highly subjective. Melzack found that 23% of primiparas and 11% of multiparas rated their labour pain as severe[1].The search for an ideal labour analgesic is very old. The required characteristics of an ideal analgesic would be[2]:
1 ) reversible and effective analgesia
2) safety and ease of administration
3) non interference with the process of labour ,or consciousness level of mother.

Several methods have been used to relieve labour pain. These include non-pharmacological like hypnosis,acupuncture etc and pharmacological like inhalational agents ,parenteral opioids, regional nerve blocks. Tramadol is a centrally acting analgesic that relieves pain by opioid mechanism as well as by activating monoaminergic spinal inhibition of pain. It is generally well tolerated with side effects like nausea, dizziness, sweating etc. however it causes less sedation and respiratory depression than morphine and similar opioids.Haemodynamic side effects are also very less. Intramuscular tramadol hydrochloride is easy to administer with reasonable safety and efficacy. The present study was undertaken to find out the role of tramadol as labour analgesic.

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## Materials and Methods:-

A prospective study was done from June 2017 to May 2018 in the Department of Obstetrics and Gynaecology ,SKIMS , Srinagar. In this study 100 pregnant women were included.

**Inclusion criteria:-**

1. Primigravida to gravida 3.
2. Term pregnancy
3. Singleton pregnancy
4. Vertex presentation excluding cephalopelvic disproportion

**Exclusion criteria:-**

1. Associated medical disorders like diabetes, hypertension.
2. Associated obstetrical complications like Preclampsia, eclampsia, antepartum hemorrhage etc
3. Known allergy to tramadol.

Once the patient enters active phase of labour with at least 4 cm cervical dilatation and full effacement of cervix, the pain score is noted. Then intramuscular tramadol 100mg injection is given. Pain relief is subsequently noted. The degree of pain relief, mode of delivery , maternal side effects , perinatal outcome in terms of apgar score and injection delivery interval is noted. Vitals of the patient arte carefully monitored.

Pain was graded in Rupees scale as percentage of whole rupee, since it can be easily applied to illiterate patients also.
Grade 1 good relief i.e. no pain
Grade 2 : mild pain (25%)
Grade 3: moderate pain (50%)
Grade 4: severe pain (>= 75%)

Statistical software SPSS (Version 20.0) and Microsoft Excel ( Version 5.00) were used to carry out the statistical analysis of the data.

Categorical variables were summarized as percentages and continuous variables were expressed as mean _+ SD. Graphically the data was represented by bar diagrams and pie charts.

## Results:-

A total of 100 patients with preselected inclusion and exclusion criteria were taken in this study.
Table 1 shows the age distribution of the study patients.

**Table 1: Age distribution of study patients**

| Age (years) | Frequency | Percentage |
|---|---|---|
| 15-19 | 8 | 8% |
| 20-24 | 32 | 32% |
| 25-29 | 36 | 36% |
| 30-34 | 18 | 18% |
| 35-39 | 6 | 6% |
| Total | 100 | 100% |
| Mean±SD=26.5±4.63 | | |

Maximum patients were in age group of 25-29 (36%) and 32% in the age group of 20-24 years.18% were in the age group of 30-34 years , 8% in 15-19 years and 6% of 35-39 years. The mean age was 26.5±4.63.

**Table 2:-** shows the mean onset of pain relief after tramadol injection was 16.5 minutes and mean duration of pairelief was 2.9 hours, with the mean injection delivery interval being 4.5 hours.

| Table 2: Descriptive Statistics of various parameters | | | | |
|---|---|---|---|---|
| **Variable** | **Mean** | **SD** | **95% Confidence Interval** | |
| Onset of Pain relief after Injection (Minutes) | 16.5 | 4.79 | 15.51 | 17.42 |
| Duration of Pain relief (Hours) | 2.9 | 0.75 | 2.83 | 3.12 |
| Injection delivery Interval (Hours) | 4.5 | 0.99 | 4.26 | 4.66 |

**Table 3:-** shows the grade of pain after administration of drug, with nopatient having severe pain, 58% having moderate pain , 16% having mild pain and 26% having no pain after the drug is administered.

| Table 3: Showing grade of pain relief among study patients | | |
|---|---|---|
| **Grade of pain** | **Frequency** | **Percentage** |
| No pain | 26 | 26% |
| Mild pain | 16 | 16% |
| Moderate pain | 58 | 58% |
| Total | 100 | 100% |

**Table 4:-**shows the mode of delivery among the study patients ,
With 78 % delivering vaginally , 12% by caesarean section and 10% by instrumental delivery

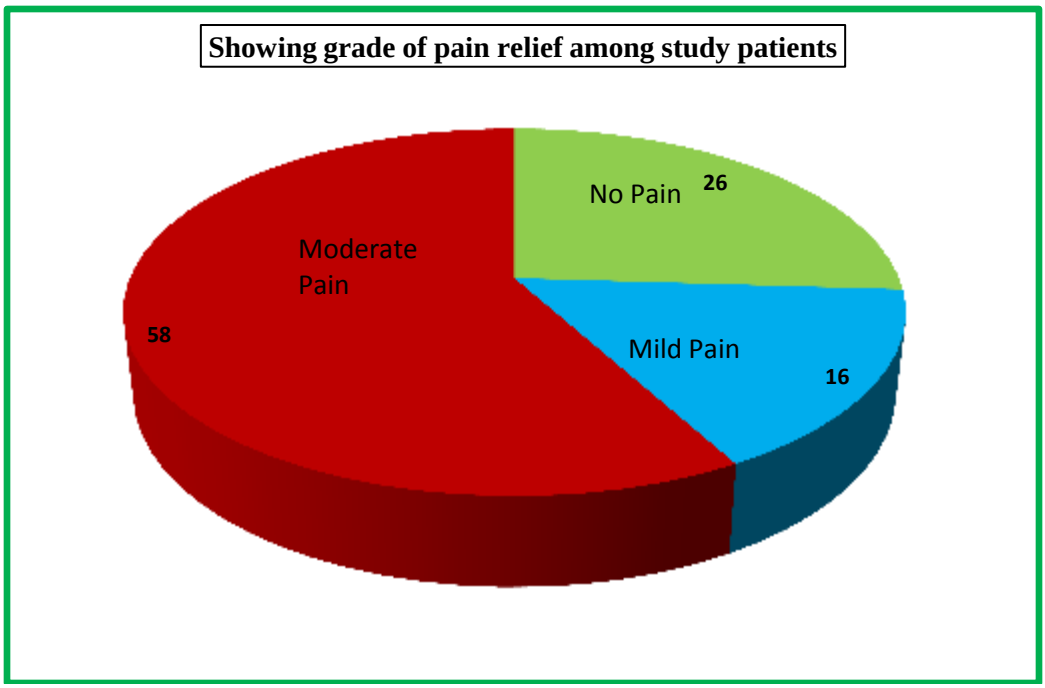
| Table 4: Mode of delivery among study patients | | |
|---|---|---|
| **Mode of delivery** | **Frequency** | **Percentage** |
| Normal vaginal delivery | 78 | 78% |
| Caesarean delivery | 12 | 12% |
| Instrumental | 10 | 10% |
| Total | 100 | 100% |

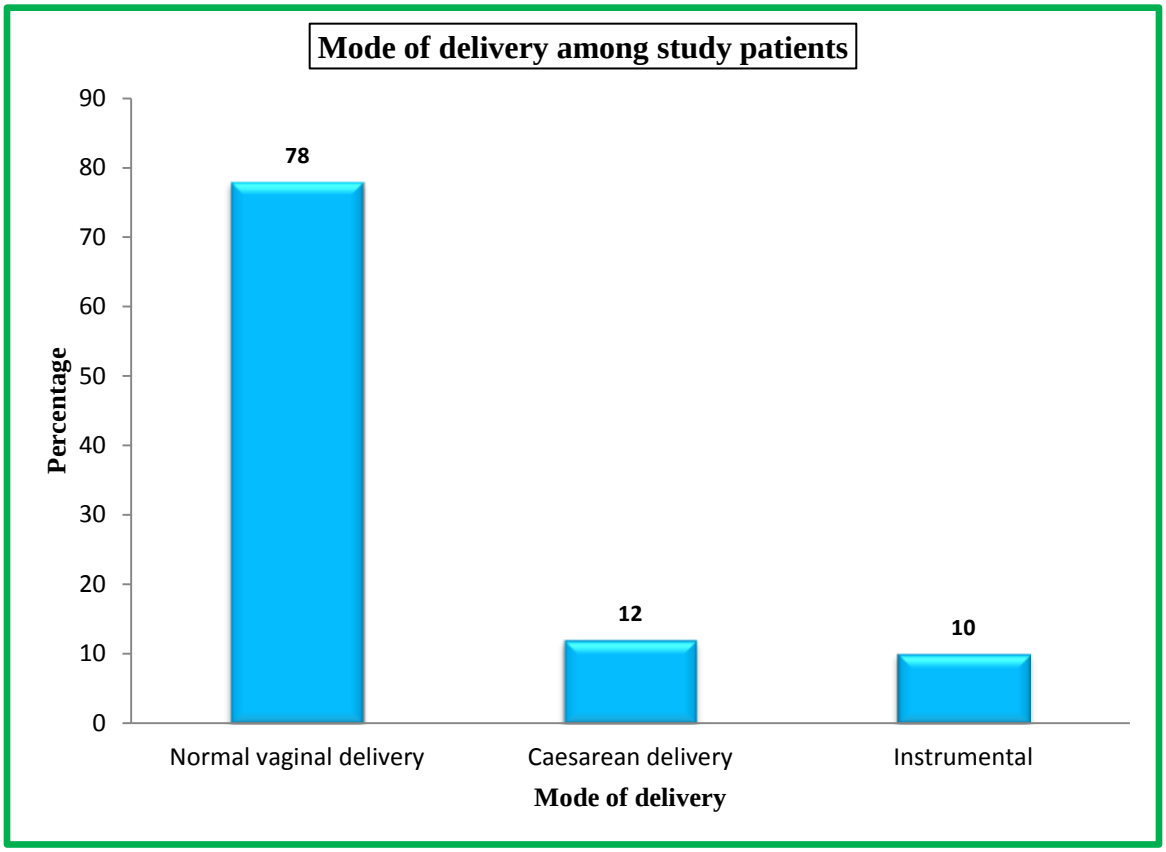
**Table 5:** Showing various side effects among study patients

| | | |
|---|---|---|
| **Side Effects** | **Frequency** | **Percentage** |
| Nausea and vomiting | 22 | 22% |
| Sweating | 20 | 20% |
| Palpitation | 2 | 2% |

**Table 5:-**shows the maternal side effects of tramadol injection in study patients with the most frequent side effect being nausea and vomiting in 22% subjects.

The mean Apgar Score at 5 minutes of birth was 7.2±0.98.




## Discussion:-

The present study was done to study the efficacy and role of intramuscular tramadol in labour analgesia.As depicted in table 1, majority of women were in the age group of 25-29 years (36%). Table 2 shows the mean onset of pain

relief after tramadol injection which was 16.5±4.79 minutes comparable to the study of Sudha et al[3]. Mean duration of labour was 2.9±0.75 hours and injection delivery interval was 4.5±0.99 hours.

Table 3 depicts the grade of pain after administration of intramuscular tramadol. 58% had moderate pain, 16% had mild pain and 26% had no pain. Thus, reduction of pain severity was seen in all 100% patients comparable to the study of Asha et al[4] where reduction of pain severity from grade III and IV to grade II was seen in 100% patients. Similar type of pain relief was seen in studies of Husshein et al[5] (99%) and Sarkar etal[6] (98%).

As shown in table 4 , the most common mode of delivery was normal vaginal delivery in 78% followed by 12% by caesarean section and 10% by instrumental delivery. This was comparable to the study of M Suguna et al [7] in which 86% were delivered by spontaneous vaginal delivery, 10 % by caesarean section and 4% by forceps.

Table 5 shows the various maternal side effects of intramuscular tramadol injection with the most common being nausea and vomiting in 22% patients.

Mean Apgar score at 5 minutes of birth was 7.2±0.98 comparable with the study of Dr Surmila et al[8] in which it was 8.52±0.58.

Conclusion: Intramuscular tramadol significantly improves pain relief in laboring patients with minimal to mild side effects and thus is an effective analgesic during labour.

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