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*RESEARCH ARTICLE*

# OBSERVATIONAL STUDY TO ASSESS THE EFFICACY OF POST-OPERATIVE PAIN MANAGEMENT IN CASES OF CAESAREAN SECTION

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## *Abstract*

**Context:**The incidence of cesarean deliveries is on the rise now-a-days. Post-operative pain is a major problem and if untreated, can lead to chronic pain.

**Aims:** To observe the effectiveness of the obstetrician led post-operative analgesia regime in patients operated for caesarean section.

**Settings and Design:**The observational study was conducted at a rural based tertiary care centre, designed to include all the patients who fulfilled the selection criteria for caesarean section.

**Methods and Material:**After approval from institutional ethics committee and patient's informed consent, the multimodal analgesic regime was evaluated on "Visual analogue scale (VAS) at rest" for 24 hours. A questionnaire was also taken as feedback from the patients at end of 24hrs; for qualitative assessment.

**Statistical analysis used:** Descriptive analysis of the data collected was done.

**Results:** 91.5% patients had VAS score < four while 8.5% patients had VAS score > four. The percentage of patients who were fully satisfied, partially satisfied, not at all satisfied and in severe pain was 18%, 68%, 13.5% and 0.5% respectively. The newborn care was not at all affected in 17.5%, somewhat affected in 76.5% and to a great extent in 6% patients. In 89% patients, sleep was not affected while in 11% it was affected. Majority of patients (99%) did not mind bearing mild pain in order to prevent side effects of drugs**.**

**Conclusions:** Overall, the obstetrician led postoperative analgesic protocol followed was satisfactory. Discrepancy between patient satisfaction by VAS score assessment and patient perception by qualitative assessment suggests requirement of in-depth qualitative assessment for better pain control.



## Introduction:-

Cesarean section is associated with moderate to severe post-operative pain, which can influence postoperative recovery and breastfeeding practices and mother-child bonding. The pain causes prolonged immobilization predisposing the patient to deep vein thrombosis (DVT) and pulmonary atelectasis. The aim of our study was to observe the efficacy of pain management strategy used in the hospital for all caesarean section patients. The

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effectiveness was assessed in the form of various scores of pain and the patient satisfaction was reviewed by a qualitative questionnaire.

## Subjects and Methods:-

After approval from institutional ethics committee (IEC No. IEC/BU/120/Faculty/16/298), 200 patients over a period of one year were observed for efficacy of their post-operative pain management.

**Inclusion criteria**-

All patients who had undergone LSCS (Lower segment Caesarean section) with ASA (ASA- American society of anaesthesiologist) I-III physical status, irrespective of the type of anaesthesia given to them.

**Exclusion criteria**

1) Patient's refusal to be a part of the study.
2) Patients with psychiatric disorders/ mental illness in past or at present
(Determined by history elicited of any medication or consultation for
Psychiatric illness/ mental disorder from the patient and/or relatives)
3) History of known allergy to analgesic drugs.
4) Patients shifted to high/ intermediate dependency care unit immediately after surgery.

The pre-anaesthetic examination was done including clinical history, general, systemic and airway examination. After taking consent from patient, the details of the patient were filled in the case record form. Patients were taken for caesarean section either in emergency or as elective surgery under spinal or general anaesthesia. Postoperatively the analgesic regime advised by the obstetrician was noted and observed for 24 hours. If the patient was sleeping/ feeding the baby she was not disturbed. The VAS (visual analogue scale) 'at rest' was asked when she was awake. If sleeping comfortably she was considered to have VAS score less than four. If anytime, the VAS was more than 4 for 30mins or more she was considered to have inadequate analgesia and provided rescue analgesia.

**The regime followed was:**

In patients operated under general anaesthesia-Inj. Paracetamol 1gm IV was given before extubation (during skin closure). In patients without PIH (Pregnancy Induced Hypertension) - Inj. Diclofenac sodium 75mg IV was given at one-hour post-operative and continued eight hourly for 24hrs. Diclofenac suppository 100mg was given as rescue analgesia. In patients with PIH - Inj. Tramadol 50 mg IV was given one-hour post-operative and continued eight hourly for 24hours. Inj. Paracetamol (1 gm.) IV was given as a rescue analgesia.

In patients operated under spinal anaesthesia; Inj. Diclofenac sodium 75mg TDS was given in patients without PIH when they complained of pain (VAS>four), and in patients with PIH Inj. Tramadol 50 mg IV TDS was started. Rescue analgesia was same as mentioned above.

**Statistical analysis used:**

Descriptive analysis of the data collected was done. Qualitative analysis was also done in all patients using a questionnaire.

## Results:-

**Table 1:-** Quantitative assessment of Pain by VAS score.

| | FREQUENCY | PERCENTAGE |
|---|---|---|
| VAS <4 | 183 | 91.5% |
| VAS>4 | 17 | 8.5% |
| **TOTAL** | **200** | **100%** |

**Table 2:-** Patient satisfaction with analgesia.

| Patient satisfaction | Frequency | Percentage |
|---|---|---|
| **Fully satisfied** | **36** | **18%** |

| | | |
|---|---|---|
| **Partially satisfied** | **136** | **68%** |
| **Not at all satisfied** | **27** | **13.5%** |
| **In a severe pain** | **1** | **0.5%** |
| **TOTAL** | **200** | **100%** |

**Table 3:-** Pain affecting new-born care.

| | Frequency | Percentage |
|---|---|---|
| **Not at all affected** | **35** | **17.5** |
| **Somewhat affected** | **153** | **76.5** |
| **Affected to a great extent \|** | **12** | **6** |
| **Total** | **200** | **100** |

**Table 4:-** Pain Affecting Sleep Pattern.

| Ready to bear pain | Frequency | Percentage |
|---|---|---|
| **Agree** | **198** | **99** |
| **Disagree** | **2** | **1** |
| **Total** | **200** | **100** |

**Table 5:-** Patients ready to bear pain to prevent side effects.

| Pain affecting sleep pattern | Frequency | Percentage |
|---|---|---|
| **Affected** | **22** | **11** |
| **Not affected** | **178** | **89** |
| **Total** | **200** | **100** |

## Discussion:-

Various set ups have studied the postoperative pain in patients operated for caesarean section using multi-modal analgesia, but variability in the form of patient population, demographic distribution, protocols followed for post – operative pain management etc. exists. Hence, we decided to observe the 'obstetrician led' analgesia protocol followed for its efficacy.

As compared to other procedures, post-operative pain in cesarean section is a complex entity. Optimal pain control in cesarean delivery involves several important considerations, like placental transfer of the drugs, difficulty in performing regional anesthesia, excretion of drugs in breast-milk, and enhancing mother's ability to be independent and to care for her newborn baby[4]

We assessed the efficacy of obstetrician led analgesia regime by measuring VAS score 'at rest' in elective or emergency caesarean section and found that 91.6% of patients were satisfied (VAS< four) and 8.4% of patients were unsatisfied (VAS> four) with the post-operative analgesic regime.

An observational study done by Samina Ismail' et al. at Karachi, in 2012,[1] record of patient's postoperative pain orders, and analgesic regime for 24 hours in the post-operative period was done with assessment by visual analogue scale (VAS) at rest and at movement after elective caesarean section. They concluded that the postoperative analgesia regime was started by the obstetric team in 81% of patients and in rest by the anaesthesia team. The analysis of pain by VAS was up to 3 in 89.7%, 4 to 6 in 9.5%, and 7 to 10 in 0.8% of patients. We also had similar findings.

Andrew kintu et al,2019 at Mulago hospital, Uganda [5] assessed pain with various intravenous analgesic agents for post-operative pain in first 24 hour of caesarean section; like diclofenac only, pethidine only, tramadol only and combinations of drugs. The highest pain scores using VAS were reported at 5-6 hours which were similar to our study though we used Inj. Paracetamol instead of Inj. Pethidine in our study.

In our study we found 91.5% patients were satisfied as per VAS score and 86% patient were satisfied by qualitative based questionnaire; indicating some similarity. But there was a discrepancy between the patients who were unsatisfied as assessed by VAS (8.5%) and those assessed by qualitative based questionnaire (14%)

Samina Ismail, et al in 2012[1] have studied post-operative pain and patient satisfaction by questionnaire in patients undergoing elective caesarean section. Assessment was done by visual analogue scale (VAS) and patient satisfaction. They found 74% of patients were satisfied and we found 68% patients were satisfied.

Various scales are used for pain assessment. Amongst NRS (numerical rating scale), VRS (verbal rating scale) and VAS (visual analogue scale)[8]. Efficacy of VAS score was found to be more than the other two parameters.[20]

Eleonora Storti, et al. in 2018[26] studied timed multimodal versus unimodal analgesic plan for post-operative period. They used a satisfaction questionnaire in relation to the treatment plan; and VAS score was also assessed. They concluded that optimum pain relief was with both analgesic treatments and maximum pain experienced was up to 24 hours. We also used multimodal drugs in our regime the duration of our study was in the first 24 hours post operatively.

In majority of patients' sleep pattern was not affected. In 22 patients sleep was affected and in 178 patients sleep was not affected. Demet Aktas, et al.[27] studied the relationship of level of pain and sufficiency of sleep-in operated case of cesarean section in a hospital at Ankara. Visual Analogue scale was used to determine the level of pain and Form of Factors that Affect Sleep Pattern (FFASP). They found that as the severity of FFASP scores increased, sleep quality decreased [27].

In 35 patients new born care was 'not at all affected'; in 153 patients -'somewhat affected' in 12 patients - 'not at all affected'. Amy J. Hobbs, et al. [28] experienced the same finding that inadequate pain control can affect initiation and regularity of breastfeeding and new born care.

In our study we noted one more important finding that majority of the patients, do not mind bearing pain to prevent side effects of drugs in the new born'. Such findings were not mentioned in any of the references that we went through. This probably is the quality of patients in low-income settings, ("suffering in silence ") which needs to be addressed by pain awareness programs amongst all health care providers and not just the patients!

## Conclusion:-

Overall, the obstetrician led postoperative analgesic protocol followed was satisfactory. Discrepancy between patient satisfaction by VAS score assessment and patient perception by qualitative assessment suggests requirement of in-depth qualitative assessment for better pain control.

**Limitation Of The Study**

1. As our hospital was a covid centre, number of patients coming for caesarean section was less during the pandemic.
2. The qualitative questionnaire which we made contained only four questions which were not comprehensive enough to evaluate post-operative pain in patients operated for caesarean section.

**Scope Of The Study**

In depth study of qualitative analysis of perception of pain after caesarean section, in order to formulate "individualized patient care protocols" for successful outcomes.

1. Similar audits can be undertaken after developing protocols for post-operative pain. Such studies may unearth the actual reasons of inadequacy of pain management and help to establish robust protocols accordingly.
2. Development of protocols for management of acute postoperative pain by implementation of multi-disciplinary teams for better control of acute pain conditions like burns, trauma post-operative pain, labour pain etc. in the hospital.

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