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## Drug Utilisation Pattern of Post-Operative Analgesia in Surgery Ward of Tertiary Care Teaching Hospital



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### ABSTRACT

This study aims to check the effectiveness of therapy and to categorize patients based on age, gender, type of surgery and usage of analgesics. A total of 100 patients were enrolled, amongst which majority of them were male. 28 different types of surgery were performed on these patients. Diclofenac was the highest prescribed analgesic. Most patients who undergo surgical procedures experience acute post-operative pain, but less than half report adequate post-operative pain relief. Inadequately controlled pain negatively affects the quality of life, function, the risk of post-surgical complications and the risk of persistent post-surgical pain.



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## INTRODUCTION

Analgesics are defined as the drugs that relieve pain without blocking nerve impulse conduction or markedly altering sensory function.

Based on the type of relieving action, they are classified into two:

**Opioids:** These inhibit pain impulses by acting on brain receptors. They can be used for short or long-term relief of pain, mainly by prescription, but bears a risk of drug addiction.

Example: Morphine, Methadone, Codeine

**Non-opioids:** These used for short term relief and modest pain, are accessible without prescription. They act by inhibiting the synthesis of prostaglandins which are the molecules involved in the peripheral perception of pain.

Examples: Ibuprofen, Diclofenac, Aspirin, Acetaminophen

A particular analgesic dose that produces successful pain relief in one patient may generate bearable adverse effects and insufficient pain control in another person.<sup>[1]</sup>

## PAIN MANAGEMENT

Acute pain is defined as pain present in a patient after a surgical procedure.<sup>[2]</sup> Safe and effective post-operative pain management should be based on the plan of care tailored for the individual and the surgical procedure involved, and multimodal regimens are recommended.<sup>[3]</sup> The advantages of effective postoperative pain management include patient comfort and therefore satisfaction, earlier mobilization, faster recovery and reduced cost of care.<sup>[1]</sup>

The effective relief of pain is of the utmost importance to anyone treating patients undergoing surgery. Pain relief has significant physiological benefits; hence monitoring of pain relief is increasingly becoming an important post-operative quality measure.<sup>[2]</sup>

### Study Objective:

The objectives of the study were:

- To check the effectiveness of the therapy.

- To categorize patients based on below following criteria.
- Type of Surgery
- Use of analgesics:

Class of analgesics

Duration of usage

## **MATERIALS AND METHODS**

The observation was carried out to find out the scope of the study in surgery ward. Then relevant articles were collected and reviewed. A particular data collection form was designed which included all the necessary information and also a subject consent form was prepared. The sample size was calculated using Raosoft's sample size calculator. The margin of error was 5% and the confidence level was 95%. Information regarding the analgesic use was collected and recorded in the data collection form. Data was analyzed and reported using the graphical method and tabulations. Statistical Analysis was done by using GraphPad Prism 8.0.1.

Duration of study: 6 months.

Study type: Prospective-Observational study.

Sample size: 100 patients.

Source of data: Parul Sevashram Hospital.

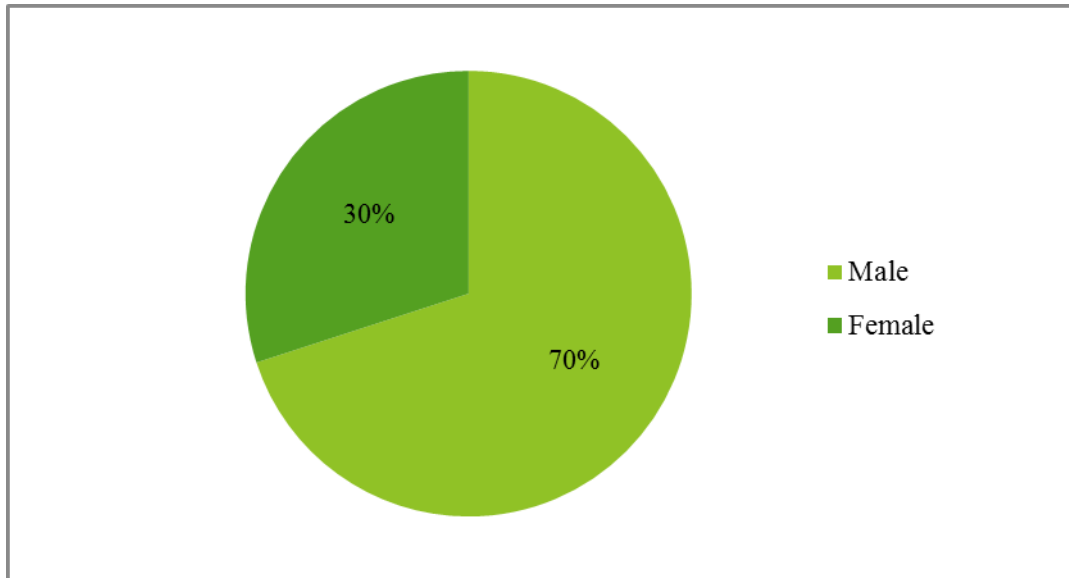
## **ETHICS APPROVAL**

The ethics approval was obtained from Parul University Institutional Ethics Committee for Human Research (PU-IECHR) with approval number PUIECHR/PIMSR/00/081734/1807.

## **RESULT AND DISCUSSION**

### **RESULTS**

This study was conducted at Parul Sevashram Hospital for six months. 100 patients were enrolled and followed during the study.



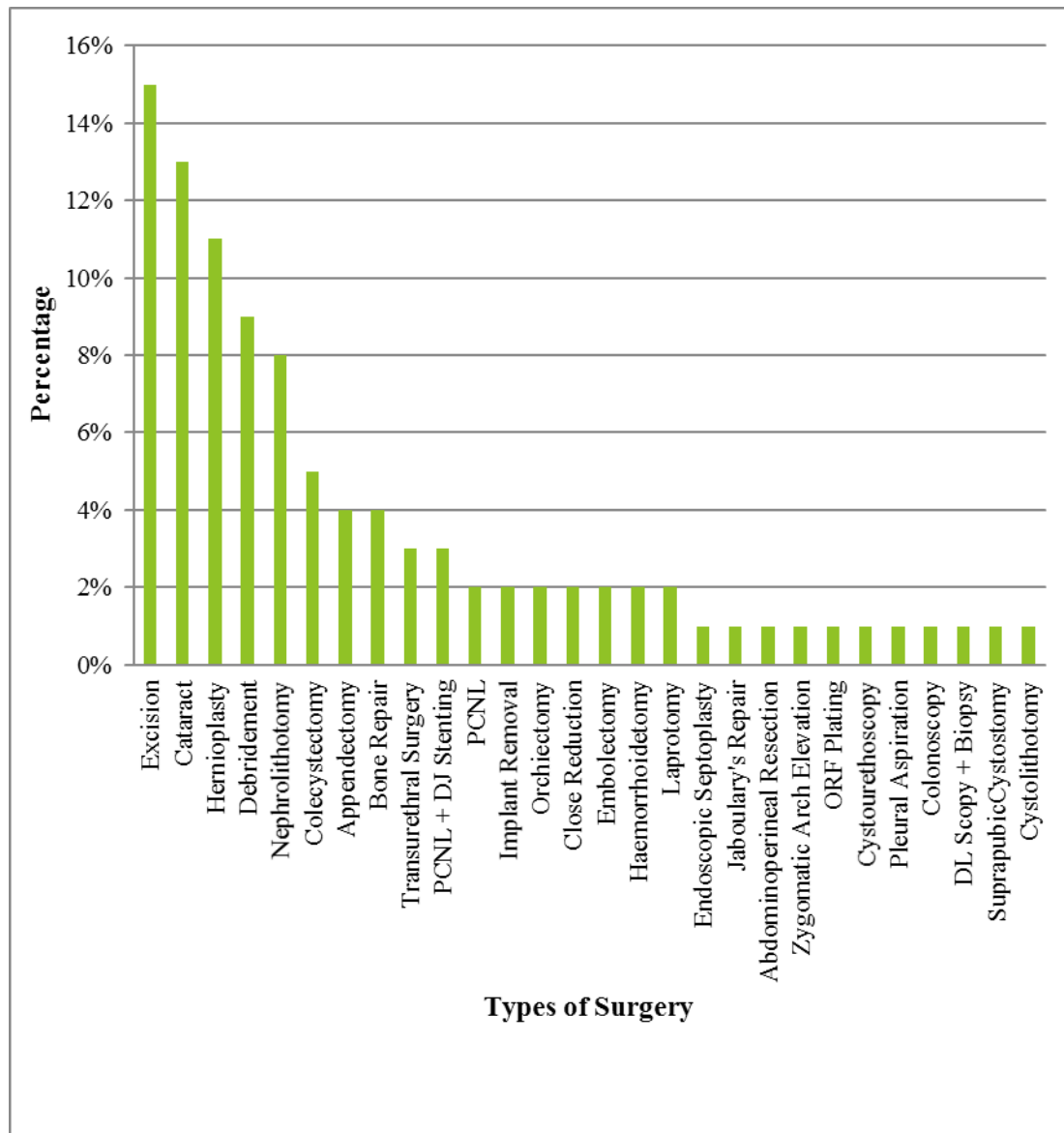
**Figure No. 1: Gender Distribution**

Out of 100 patients, 70 (70%) were male and 30 (30%) were female. The data suggested that more number of male patients were administered with analgesics than female. P-value (Two tailed) <0.0001.

**Table No. 1: Age Group Distribution**

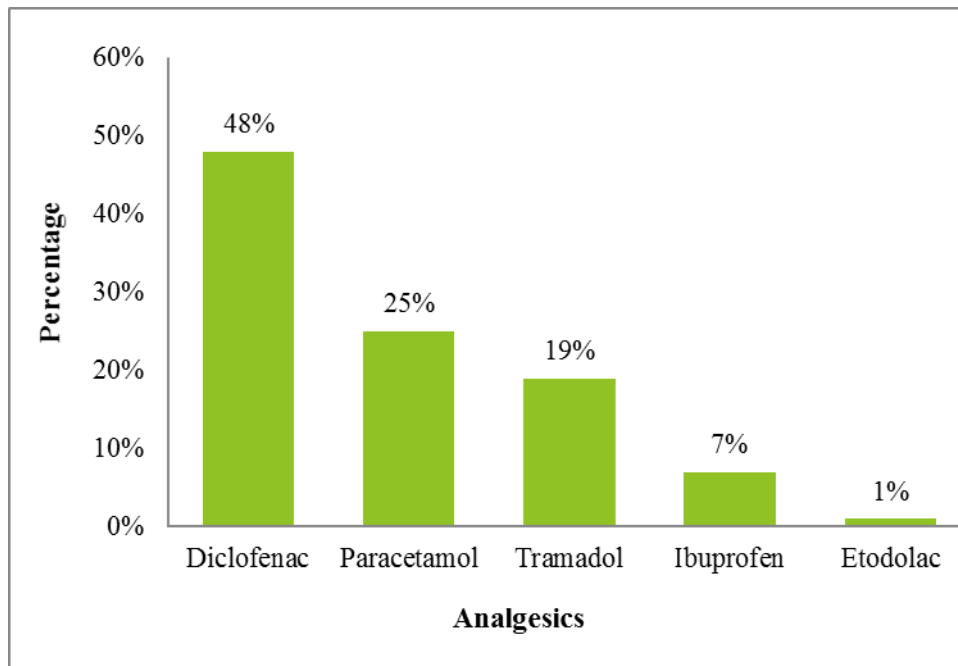
Age(years)	No. of patients	Percentage
15 - 19	2	2%
20 - 24	10	10%
25 - 44	36	36%
45 - 64	43	43%
65 - 79	9	9%

The patients were divided into five categories according to their age based on 2011 Census of India. Maximum numbers of patients were of the age group 45 – 64 years (43%) and the least were of the age group 15 – 19(2%).



**Figure No. 2: Types of Surgery:**

The patients underwent 28 types of surgery. Excision was carried out for 14 patients (50%) who were highest amongst the surgeries done. Cataract was performed on 13 patients (46.4%). Hernioplasty was the third most common surgery, which was conducted on 11 patients (39.2%). The subsequent surgeries were done only on 1 patient(3.5%) which are Endoscopic Septoplasty, Jaboulay’s Repair, Abdominoperineal Resection, Zygomatic Arch Repair Elevation, ORF Plating, Cystourethroscopy, Pleural Aspiration, Colonoscopy, DL Scopy + Biopsy, Suprapubic Cystostomy and Cystolithotomy.



**Figure No. 3: Analgesics Prescribed**

Diclofenac (48%), Paracetamol (25%) and Tramadol (19%) were the most prescribed analgesics. Diclofenac was the most prescribed drug in this study and Etodolac (1%) was the least.

A combination of Aceclofenac + Paracetamol + Serratiopeptidase was the highest prescribed analgesic combination. The only other combination given was Paracetamol + Tramadol.

## DISCUSSION

In this study, a total of 100 patients were observed. The gender ratio, males (70%) and females (30%) were similar to the study done by *Dinesh R et al.*<sup>[4]</sup>

The patients of age group belonging to 45 - 64 years underwent more surgery which is also similar to the studies done by *Dinesh Ret al.*<sup>[4]</sup>The highest number of surgeries performed were Excision (50%), Cataract (46.42%) and Hernioplasty (36.28%) and the least performed surgeries were Jabouly's Repair (3.17%), Colonoscopy (3.17%), Haemorrhoidectomy (7.14%) and Laparotomy (7.14%) were similar to the studies done by *Dinesh R et al.*<sup>[4]</sup>

Diclofenac (48%), PCM (25%), Tramadol (19%), Ibuprofen (5%) and Etodolac (1%) were the analgesics prescribed in the study. Diclofenac was the highest prescribed drug, parallel to

the study conducted by *Roshini Aet al.*<sup>[1]</sup> and contradicted the study done by *Kaur GolarS et al.*<sup>[5]</sup>

A combination of Aceclofenac+ Paracetamol+ Serropeptidase (46%) was the highest prescribed analgesic combination. The only other combination given was Paracetamol + Tramadol (1%).

## CONCLUSION

This study gives an overview of the drug utilization pattern of analgesics. It was done by analyzing various parameters like gender, age, types of surgery and analgesics prescribed. Prescriptions of analgesics were done based on the clinical expertise of the health care practitioners. Most prescriptions for post-operative analgesia were ordered. The patients who underwent surgical procedures experienced acute postoperative pain. Many preoperative, intra-operative, and postoperative interventions and management strategies are used for reducing and managing postoperative pain. Inadequately controlled pain negatively affects the quality of life, function, and functional recovery, the risk of post-surgical complications, and the risk of persistent postsurgical pain. Hospital pain management protocols should be regularly reviewed.

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## CONFLICT OF INTEREST

All authors have no conflict of interest to declare concerning the publication of this manuscript.






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