

## RATIONAL USE OF ANALGESICS IN DENTAL PRACTICE

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### ABSTRACT

*The most common reason for seeking dental treatment is pain which may be due to different reasons and both surgical and non-surgical treatments necessitate the use of prescription analgesics.*

*The aim of the study was to find out the common pain killers used in dental practice and to focus on their proper use both by the patients and practitioners and associated side effects.*

*A retrospective study on 50 patients with dental pain and 50 practitioners working at different secondary care hospitals was conducted. Effectiveness and side effects of these medications were studied using the data collection form. Fifty pre-designed questionnaires were filled by patients with dental pain and practitioners. The questionnaire contained the content to determine the proper use of analgesics and their associated side effects. Then the Proformas were evaluated on the basis of percentages and results were displayed in graphical form.*

*Ninety eight percent practitioners prescribed NSAIDs while only 2% prescribed opioids in severe conditions. The most commonly prescribed NSAIDs were flurbiprofen, they were prescribed by 40% respondents, paracetamol 16%, nimesulide 14%, ibuprofen 10%, diclofenac, naproxen 8% and mefenamic acid 4%. Certain side effects like stomach upset, chest burn and intestinal bleeding were associated with the use of NSAIDs.*

*The most common group of class used for pain reduction was non-steroidal anti-inflammatory drugs including flurbiprofen, paracetamol. Conclusively, attention must be given to the rational use of analgesics as irrational use by the patients and the irrational prescribing by practitioners has been observed.*

**Key Words:** Analgesics, NSAIDS, Dental practice, Rational, Irrational.

### INTRODUCTION

Rational use according to World Health Organization is the appropriate use of medicine according to the patient's clinical needs for the right period of time in right doses and in lowest cost.

Pain is an experience which is not pleasant and sensory or emotional in nature which is linked with the damage of tissues that can be actual or potential<sup>1</sup> and needs to be managed and for reduction of pain two groups of drugs are non-steroidal anti-inflammatory drugs (NSAIDs) and opioids.

The common drugs in NSAIDs group are aspirin, ibuprofen, paracetamol and provide excellent relieve from pain as this group have both anti-inflammatory and pain relieving actions.<sup>2</sup> In choosing analgesics for mild to severe pain practitioner should consider the analgesic ladder as opioids should be prescribed only in severe pain conditions and mostly in combination therapy.<sup>3</sup> The most commonly used opioid in dental practice is codeine, usually use in combination with paracetamol in commercial preparations.

Rational prescribing involves six steps according to World Health Organization which include: Firstly state or specify the situation of patient then focus on objective and find out the alternatives to ensure the efficacy, safe use and low cost of the drug then give information regarding medicine or terminate the treatment. So, if any problem is found to be present in these six steps then every step should be re-evaluated from the start.<sup>4</sup>

NSAIDs should not be used in patients with any type of hemorrhage and in patients who are taking anti-coagulant like warfarin.<sup>5</sup>

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To manage dental pain the 3D principle that is diagnosis, dental treatment and drug should be followed. As, suitable treatment should be considered to eradicate the cause of problem to relieve symptoms and inflammation is the main cause of using analgesic for dental patients.<sup>6</sup> The aims of the study were to find out the commonly used by patients and prescribed by local practitioners and to note their effectiveness and side effects analgesics.

## METHODOLOGY

Fifty pre-designed questionnaire were filled by hand in the face to face interaction with patients and practitioners in hospitals of Lahore i.e. Punjab dental Hospital, Dental department of Shalamar Hospital and Dental Department of Services Hospital. It was observational and questionnaire based study. Sample size was 50. They were selected on the basis of random sampling and questionnaires were filled with detail and in calm environment within the period of 2 months. Patients of different age groups were selected randomly as all the patients with any type of dental pain were included and 55% patients were male and 45% were females. Finally accurately filled questionnaires were

then evaluated for study. Questionnaires were designed to observe the proper use of analgesics and their related side effects and included questions that evaluate commonly prescribed and commonly used analgesics both by practitioners and patients respectively. Age factor, combination therapy effects, analgesics ladder were also included in relation to their use. Data were calculated, evaluated on the basis of percentages and shown by graphical method.

## RESULTS

In this study it was observed statistically that 70% sufferer preferred medicines for the management of the pain and patients using medicines were mostly not aware about the term analgesic. The most commonly prescribed NSAIDs were flurbiprofen prescribed by 40% respondents, Paracetamol 16%, Nimesulide 14%, ibuprofen 10%, diclofenac and naproxen 8% and mefenamic acid 4%, and 96% patients who were using analgesics felt reduction in pain. In the case of practitioners 80% of the respondents prescribed analgesics for the pain reduction but most of the respondents were not aware of the term analgesic ladder. 88% of respondents consider age factor in prescribing specific dose of analgesics. 60%

TABLE 1: COMMONLY PRESCRIBED ANALGESICS N=50

Ibuprofen	Diclofenac	Paracetamol	Nimesulide	Flurbiprofen	Naproxen	Mefenamic acid
10%	8%	16%	14%	40%	8%	4%

TABLE 2: AWARENESS ABOUT ANALGESICS LADDER TO PHYSICIANS N=50

Yes	No
70%	30%

TABLE 3: ANALGESICS PRESCRIBED IN COMBINATION THERAPY BY PHYSICIANS N=50

Yes	No
60%	40%

TABLE 4: COMMONLY PRESCRIBED MEDICINES IN COMBINATION WITH ANALGESICS N=50

Antibiotics + Analgesics	Metronidazole + NSAID's	Paracetamol+ Flurbiprofen(or other NSAID)
84%	10%	6%

TABLE 5: SIDE EFFECTS EXPERIENCED BY PATIENTS AFTER USE N=50

No side effect	Stomach problem	Chest burn	Intestinal bleeding
38%	38%	16%	8%

prescribed analgesics in combination therapy and most common combination was of analgesic and antibiotic considered by 88% of dentists and for the relief from stomach upset 10% dentists prescribed analgesic with metronidazole, and 2% dentists prescribed opioids in combination for treatment of severe pain. 38% patients had stomach upset after use and 16% dealt with chest burn and 8% intestinal bleeding.

## DISCUSSION

Oral pain may be due to pulpitis, peridontitis, abscesses, and trauma or may be due to any other conditions.<sup>7</sup> So, some conditions may be managed by non-surgical treatment and some require surgical treatment while for some conditions antibiotics or analgesics are prescribed.<sup>8</sup> To pharmacologically managing the dental pain the need is to provide specific analgesic for reduction of pain and to prevent severity. The study was done to observe the proper use of analgesic by both the patient and the practitioner and there were number of lacks in proper use by both the patients and practitioners. There were no proper patterns for prescribing analgesics.

In one of the study it was observed that most commonly prescribed analgesic was diclofenac followed

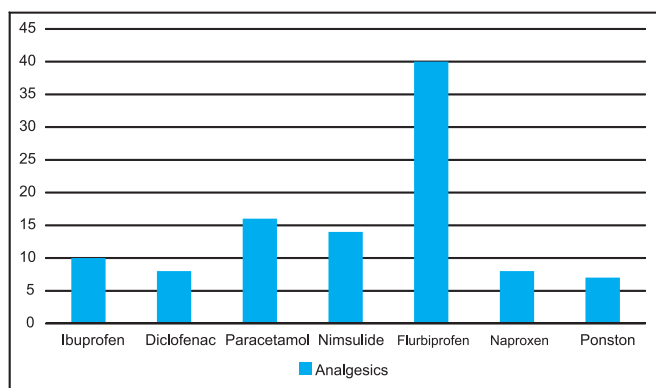


Fig 1: Percentages of commonly prescribed analgesics

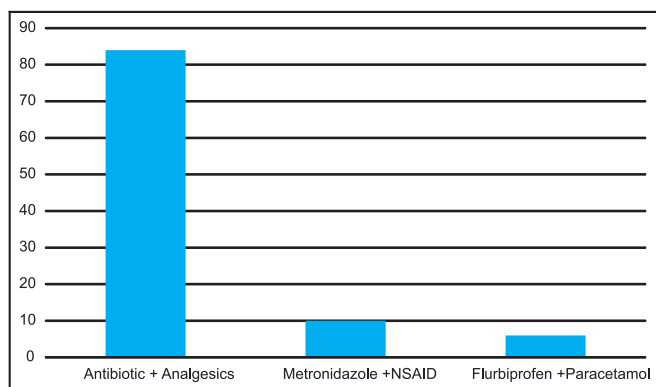


Fig 2: Commonly prescribed combinations of analgesics

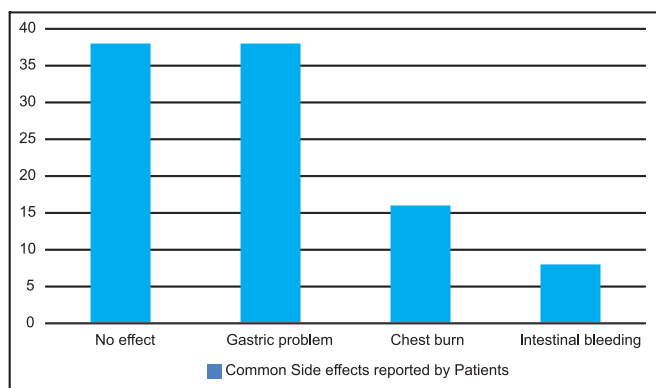


Fig 3: Common side effects associated with the use of analgesics

by combination of ibuprofen and acetaminophen and the reason to prescribe this combination according to respondent was based on severity of pain and 18.5% respondents considered medical condition and 10% considered patient age.<sup>9</sup>

Similar prescribing trends for analgesics have been observed in India<sup>9</sup>, Nepal<sup>10</sup>, Rasht<sup>11</sup>, Albama.<sup>12</sup> Evaluation of patterns revealed that there was great deal of variability in the analgesics prescribed and the patterns followed by the practitioners. One of the aspect of this study was to evaluate the proper use and effectiveness of pain killers and for this practitioners and patients should have the proper knowledge about

analgesics either NSAIDs or opioids.<sup>13</sup> In another study it was observed that only 26.1% respondents had correct knowledge about the suicidal dose of paracetamol and only 27.5% of the respondents had good knowledge of contraindications to the analgesics.<sup>14</sup>

Analgesics are not free from the side effects. It was observed that common side effects attributed to NSAIDs are gastrointestinal in nature and some analgesics may also affect the liver in toxic doses.<sup>15</sup> Use of analgesics varies according to the age of the patients. It will vary in pediatrics, adults and geriatrics.

## CONCLUSIONS

It was concluded after study that most of the dentists prescribed NSAIDs as first choice of treatment for pain alleviation. Flurbiprofen and paracetamol are mostly prescribed by most of the physicians and these findings suggest the rational prescribing in dental practice though there is lack of the specific prescribing guidelines. There are certain side effects associated with the use of analgesics which are not carefully monitored by physician. NSAIDs give increase effect in combination therapy with opioids and their efficacy increase and they tend to reduce the pain in majority of patients but still the use of analgesic is not properly monitored as patient take self-medication but the patient should consult the physician and some physicians prescribe opioid analgesic as pain reliever which has many side effects and should not be prescribe alone.

## RECOMMENDATIONS

- Pharmacist should consider counseling of patients regarding the probable side effects of analgesics.
- Pharmacist should counter check the prescription before giving it to patient.
- Opioids should be considered additional therapy that act to increase overall analgesia at the cost of increased adverse effects, as in one of the prescription observed physician prescribed codeine alone to the patient.

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#### CONTRIBUTIONS BY AUTHORS

- |                            |                                                               |
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| <b>1 Syeda Amina Hanif</b> | Study conception, acquisition of data and manuscript drafting |
| <b>2 Ammara Azmat</b>      | Design, Analysis and interpretation of data                   |
| <b>3 Saleha Sadeequa</b>   | Critical revision and manuscript drafting                     |