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## A Questionnaire Survey on Prescriptions of Medication Post Endodontic Treatment by General Dentists

Vane Swetah C. S, Dr. S. Jayalakshmi

Graduate Student, Senior Lecturer

Department of Conservative and Endodontics

Saveetha Dental College and Hospitals, Chennai, Tamil Nadu, India

### ABSTRACT

*Aim: To find the commonly prescribed medications by General dentists post endodontic treatment in the South Indian population.*

*Objective: To find prescribed medicines, by General dentists, post endodontic treatment which can either be anti-bacterial or anti-inflammatory or a combination of both depending on the treatment type and outcome.*

*Background: Endodontic therapy or root canal therapy is the treatment modality for the infected pulp of a tooth which results in the elimination of infection and the protection of the decontaminated tooth from future microbial invasion.*

*Many endodontic patients believe that post-treatment pain is unavoidable, yet several clinical trials indicate that postoperative pain occurs in only 25–40% of all endodontic patients. However, post-treatment pain may last up to several days, depending upon the treatment. Hence, successful management of endodontic pain is an important concern for patients.*

*This Research will include the comparison of prescription of medicines, post endodontic treatment.*

*Materials and Methods: A questionnaire survey consists of questions directed to general dentists regarding the type of medicine they prescribe and their duration of course.*

*Reason for Research: To find the various medicines prescribed and their duration of course for post endodontic pain treatment.*

**Keywords:** *Root Canal Therapy, Post Endodontic Treatment, Categorization of Drugs, Drug Prescription.*

### INTRODUCTION

Ideally, root canal therapy would eliminate all pain that exists in the involved tooth. Nowadays the root canal treatment is performed more easily and with less pain, but a significant percentage of patients suffer from post-treatment pain, while the purpose of root canal therapy is to relieve the pain or prevent it. Even while endodontic treatment is performed with an acceptable standard, a mild post-treatment pain is not a rare phenomenon and occurs in 30-10% of cases [1]. Patients tolerate such pain and get relief using common analgesics. On the other hand, the previous studies show that the incidence of moderate to severe pains following treatment is an unusual event which 6-12% of the patients experience it [2]. In general, mechanical, chemical or biological damage to periapical tissues during endodontic treatment are important factors causing moderate to severe pains. This inflammatory process may arise from procedures completed during the root canal procedure. These include

haemorrhage resulting from pulp extirpation, cleaning and shaping of the root canal systems beyond apex, irrigation, intra canal medications and/or root canal obturating materials [3]. Various drugs including narcotic analgesics, NSAIDS, acetaminophen, antimicrobials, and steroids have been used to relieve post- endodontic pains [4]. However, a clear, definite and explicit horizon has not been proposed to solve the problems of patients and clinicians. Thus, the aim of the study is to identify the various drugs prescribed by general dentists for post endodontic pain management.

## II.MATERIALS AND METHODS

### STUDY DESIGN

The study encompasses 100 general dentists from South India. Both male and female doctors were involved. Doctors had varied years of practice, about 2-35 years in general. The study was approved by the scientific review board, Saveetha Dental College. The data collection was from April 2016 to June 2016. Doctors who were not willing to participate in the study, Speciality practitioners and Non-practicing dentists were excluded.

### SURVEY INSTRUMENT

Questionnaire was the survey instrument of choice. The Questionnaire comprised of 16 questions which are a combination of close ended and open ended questions. The results were calculated using ANOVA and t test.

Survey on prescription of medication post endodontic treatment by General dentists

Name:

Age:

Sex:

Years of practice:

1. Do you Prescribe drugs after endodontic treatment?

A. Yes B. No

2. What category of drugs do you prescribe routinely?

A. Only analgesics B. Only antimicrobials

C. Combination

3. Which group of analgesic do you commonly prescribe?

A. Opioids or morphine group B. Non-steroidal inflammatory drugs/ aspirin group

4. If you prescribe NSAIDs, which is the most common?

A. Paracetamol B. Diclofenac C. Ibuprofen

5. Analgesic of choice for Vital tooth.....

6. Analgesic of choice for non vital tooth.....

7. Analgesic of choice with systemic involvement.....

8. Do you prescribe PRE treatment analgesics before starting RCT (Before giving LA)?

A. Yes B. No

9. If yes, what drug? .....

10. Dosage of analgesics:

A.3times daily B.2times daily C. 1time a day D.DT E.BT F.S-

O-S

11. Which group of antimicrobials of you commonly prescribe?

A. Penicillium group B. Cephalosporin group C. Clindamycin group D.

Tetracycline group

12. Do you prescribe antimicrobials for vital tooth?

If yes, what drug? .....

13. Do you prescribe antimicrobials for non vital tooth?

If yes, what drug? .....

14. Antimicrobial of choice with systemic involvement.....

Figure 1: Questionnaires on pain medication post endodontic treatment

### III. RESULTS

**Table 1: Percentage of drug prescription after endodontic treatment**

Yes	No
89%	11% (if required)

Table 1 states that about 89% do prescribe medication after endodontic treatment as compared to the 11% that do not.

**Table 2: Categorization of Drugs**

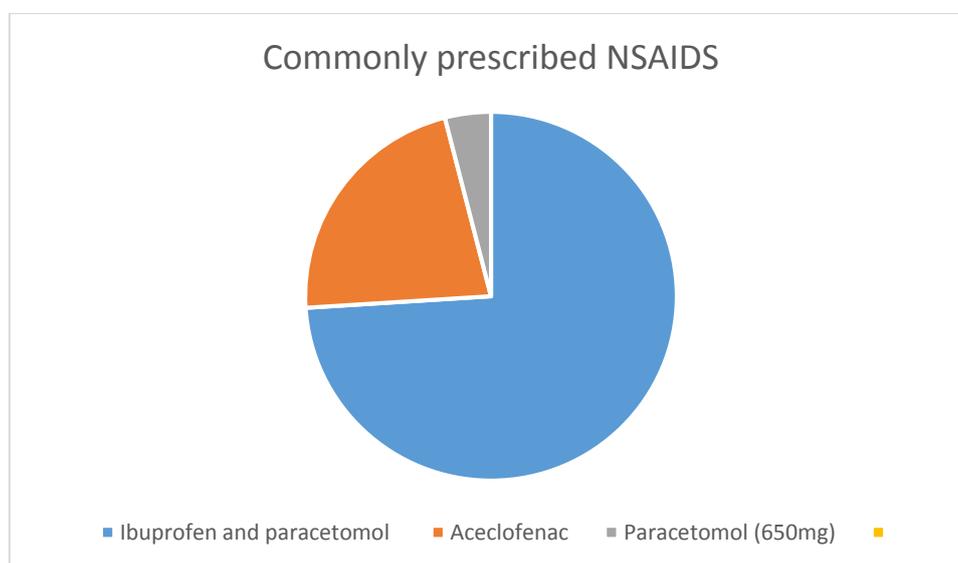
Only Analgesics	Only Antimicrobials	Combination
3%	3%	92%

Table 2 shows that about 3 % prefer analgesics, 3% prefer antimicrobials and 92% prefer a combination of the two.

**Table 3: Commonly prescribed Analgesics**

Opioids or morphine Group	Non-Steroidal Inflammatory drugs/Aspirin
21%	79%

Table 3 shows that NSAIDS are commonly prescribed with about 79% and opioids are prescribed only 21%



**Figure 2: Pie Chart demonstrating commonly used NSAIDS**

From figure 2, we can infer that the commonly prescribes NSAIDS are ibuprofen and paracetamol (75%), Aceclofenac (22%) and paracetamol -650mg (4%)

Upon data analysis, we identified that Analgesic of choice, prescribed by most dentists for a vital tooth was ibuprofen+ paracetamol (92%) and Aceclofenac (8%) whereas the analgesic of choice for a non-vital tooth is ibuprofen+paracetamol (96%) and Aceclofenac (4%).

However, the analgesic of choice when there is systemic involvement was found to be paracetamol+ ibuprofen (53%), plain paracetamol (32%), Aceclofenac and antibiotic (5%), Piroxicam (5%) and Diclofenac (5%).

**Table 4: Percentage prescribing pre-treatment analgesics**

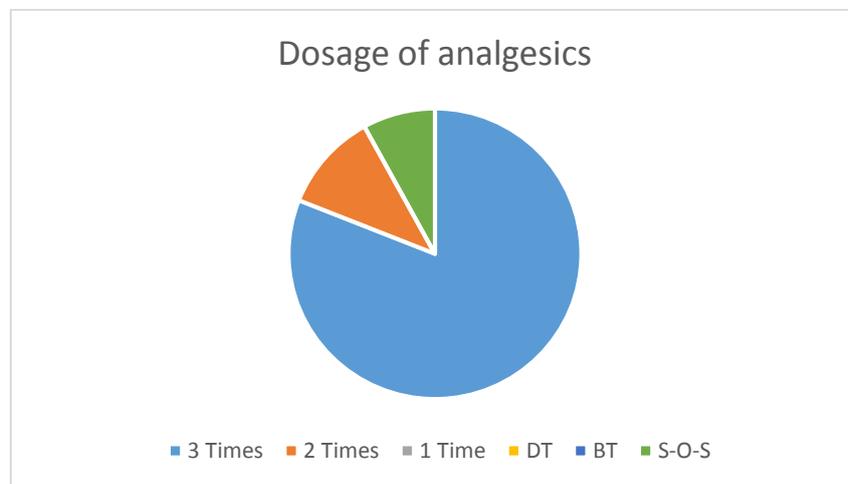
Yes	No
62%	38%

Table 4 shows that 62% do prescribe pre-treatment analgesics and about 38% do not prescribe them.

**Table 5: Drugs preferred for pre-treatment analgesics**

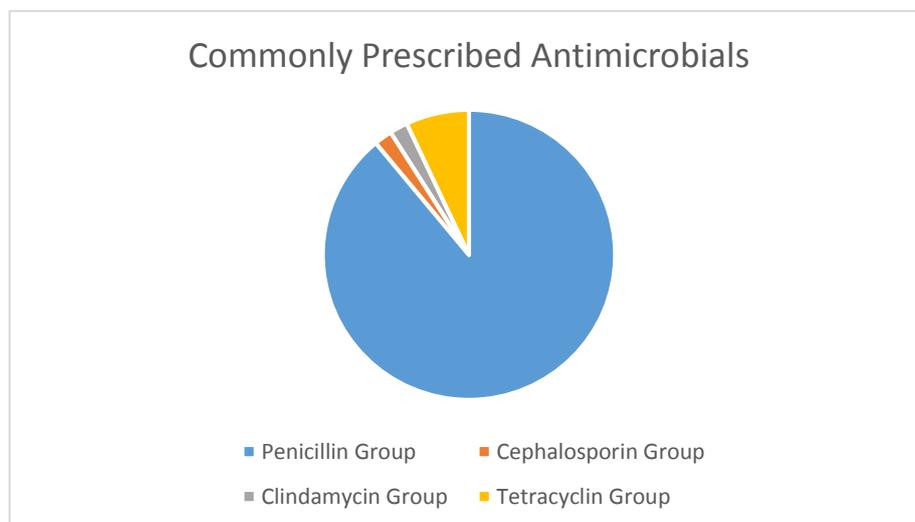
Anti-Inflammatory	77%
Paracetamol	10%
Ibuprofen	13%

When asked about pre-treatment analgesics, the replies were anti-inflammatory (77%), Paracetamol (10%) and Ibuprofen (13%), which are recorded in table 5.



**Figure 3: Pie chart showing the Dosage of Analgesics.**

The pie chart in Figure 3 shows that dosage varies from 3 times (81%), 2 times (11%), 1 time (0%) to DT (0%), BT (0%), and S-O-S (0%).



**Figure 4: Pie chart showing commonly prescribed Antimicrobials**

Pie chart in Figure 4 shows the commonly prescribe antimicrobials which are penicillin Group (89%), Cephalosporin Group (2%), Clindamycin Group (2%) and tetracycline Group (7%).

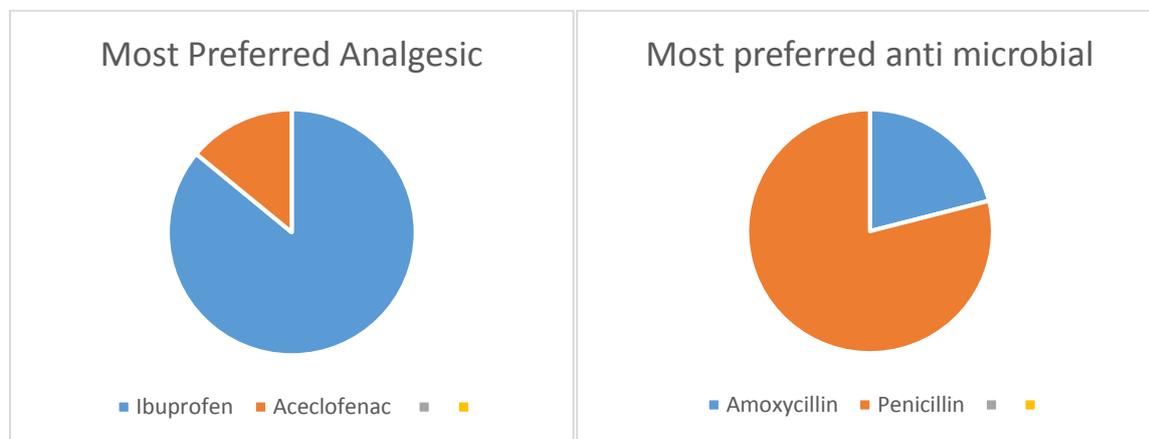
Upon further data analysis, we found out that antimicrobials prescribed for vital tooth were Amoxicillin (74%), Penicillin (14%) and metronidazole (12%) where for non- vital tooth it included Amoxicillin (56%) and penicillin (44%).

Antimicrobials commonly prescribed for systemic involvement includes Amoxycliin (93%) and ciprofloxacin (7%)

**Table 6: Course and duration of antimicrobial prescription**

3 Times for 3 days	88%
2 times for 2 days	12%

**Table 6 shows that antimicrobials were commonly prescribed for 3times for 3 days (88%) or 2 times for 2 days (12%).**



**Figure 5: Commonly prescribed Analgesic and Anti-microbial.**

Figure 5 shows that the commonly preferred analgesic is ibuprofen (86%) and Aceclofenac (14%) whereas commonly prescribed anti-microbials are Amoxicillin (85%) and Penicillin (15%).

**IV. DISCUSSION**

Hargreaves and Seltzer(2002) [5] described a combined approach for management of odontogenic pain, which included taking into consideration the diagnosis, definitive treatment, and drugs.

Regarding pre-treatment analgesics, Prophylactic administration of Non-Steroidal Anti-Inflammatory Drugs before RCT can block the cyclooxygenase pathway, which is the main pathway for pain sensation, thus, blocking it even before it begins [5,6,7]. They also suppress the release of inflammatory mediators, particularly prostaglandins, which help in sensitisation of peripheral nociceptors [11]. This opinion has also been backed up by researchers [5]. The survey showed that about 62% do prescribe medication prior to endodontic treatment and the common drugs are anti-inflammatory (77%), paracetamol (10%) and ibuprofen (13%).

Regarding post-treatment analgesics, Hyllested et al. (2002) [10] reviewed various articles wherein they studied the effects of NSAID drugs and their combination in controlling pain. They concluded that NSAID medicines are effective in dental treatments, whose studies stand parallel to our findings where NSAIDs were found to be the most preferred analgesic with 79%. In terms of health outcomes and applications, according to the nature of dental pain, especially endodontic pain, NSAID medications undoubtedly are useful in controlling post-operative pain. This issue has also been proved by Penniston and Hargreaves, Rogers et al [13, 14]. A study by Averbuch and Katzper [12] showed the positive effect of ibuprofen on dental pain which stands in accordance with our results were ibuprofen in a commonly used NSAIDs.

As far as antimicrobials are concerned, the pain caused is because of an imbalance in the host-bacteria relationship, cause due to intra canal preparations. According to a study conducted by Shruti Srinivasan et al (2016), the most commonly prescribed antimicrobials were amoxicillin and metronidazole due to their increased additive effects on both obligate and facultative anaerobes [15]. These results stand in correlation with our findings where in a majority preferred amoxicillin as well (85%).

Raldi et al. (2002) suggested the use of analgesics along with antimicrobials. The results also showed that 92% of general dentists prescribe a combination of the two, thus showing the additive effect of the two in comparison [17].

The commonly prescribed antibiotic for systemic involvement is amoxicillin. However, Administration of systemic antibiotics should be considered when infection appears to be spreading, indicating failure of local host responses, or when host defense mechanisms are known to be compromised and the patient is at an increased systemic risk [18].

## **V. CONCLUSION**

The aim of the study is to find the survey of medication for post endodontic treatment and sheds light on the scientific basis for the medications prescribed. This study enumerates on the various medications and their durations post endodontic treatment. As pain is generally seen post endodontic treatment, successful management of this is an important concern for the patient well-fare.

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