

Anti-Inflammatory Drugs Prescription Pattern in Endodontics

Harbinder Singh^{1*} Aprajita Moses² Sristi Sruti³ Raghav Agrawal⁴ Durba Chatterjee⁵ Shibam Bhagat⁶

¹Professor and Head, Department of Conservative Dentistry and Endodontics, Awadh Dental College and Hospital, Jamshedpur, Jharkhand, India.

²PG Student, Department of Conservative Dentistry and Endodontics, Awadh Dental College and Hospital, Jamshedpur, Jharkhand, India.

³PG Student, Department of Conservative Dentistry and Endodontics, Awadh Dental College and Hospital, Jamshedpur, Jharkhand, India.

⁴PG Student, Department of Conservative Dentistry and Endodontics, Awadh Dental College and Hospital, Jamshedpur, Jharkhand, India.

⁵PG Student, Department of Conservative Dentistry and Endodontics, Awadh Dental College and Hospital, Jamshedpur, Jharkhand, India.

⁶PG Student, Department of Conservative Dentistry and Endodontics, Awadh Dental College and Hospital, Jamshedpur, Jharkhand, India.

ABSTRACT

Background: Pain management in dentistry is very challenging. Prescriptions are often prescribed without getting the desired effect. The objective of this work was to assess the practitioners' prescription patterns of anti-inflammatory drugs in endodontics.

Materials and Methods: Hundred patients' medical records were selected to assess the endodontic treatment quality from radiographs and anti-inflammatory drug prescriptions. The data collected was processed with Epi-Info. Fr Version 7 and tables and graphs were produced using Microsoft Excel 2016 software.

Results: Out of all the disease that needed pain control, no SAIDs were prescribed. However, to manage all the types of pain NSAIDs were only prescribed. The total number of 71 analgesics were prescribed. To manage acute pulpitis, 42% of drugs were used, for sub-acute pulpitis 17%, for Pulpo-desmodontal syndrome 18%, for chronic pulpitis 10%, for Acute Apical Periodontitis 8%, and for Phoenix abscess 4%.

Conclusion: Health professionals should prescribe anti-inflammatory only after assessing the desired effect to the patients.

Keywords: Anti-inflammatory drugs, dentistry, endodontics.

INTRODUCTION

In the present scenario the pain management in dental setup is very challenging. This is mostly because the patients may experience post-operative pain due to the pulpal and periapical infections.¹ A fruitful endodontic treatment is the situation treatment to define the inflammation and put an end to the related-pain. As per guidelines given by the National College of Odonto-Conservative Teachers (NCOCT), the endodontic treatment is a therapeutic process aimed at root canals with respects to the standard endodontic triad:

preparation, antisepsis and obturation. The coronal and apical end of the root canal are managed according to the above. But it's really very difficult to control the intensity of pain without any anti-inflammatory drugs.² These drugs can be either steroidal or non-steroidal and can be administered either topical or systemic.³ As a topical administration route it can be introduced into the root canal system which can give immediate pain relief. However, constant and regular use of these drugs can lead to allergy, resistance and sensitivity,

Received: Jan. 13, 2021; Accepted: Mar. 5, 2021

*Correspondence Dr. Harbinder Singh.

Department of Conservative Dentistry and Endodontics, Awadh Dental College and Hospital, Jamshedpur, Jharkhand, India.

Email: jolly17107

thus limiting their frequent use. They are used systemically; it is for treating inflammatory inflammation and relieving pain.⁴ They are also given for precautionary purposes and their analgesic assets in cases of inferior alveolar nerve damage, resulting from either over-instrumentation of the apical nerve not respecting the working length, or by exceedance filling material.⁵

Similar to other drugs, these drugs have certain indications and contraindications. Keeping this in mind, the Francophone Society of Dental Medicine and Dental Surgery had recommended that non-steroidal anti-inflammatory drugs be well-thought-out only as analgesics because they do not have known side effects and contraindications on edema. Regular use of anti-inflammatory drug needs increased vigilance and a good knowledge of their mechanisms, beneficial and adverse effects and incompatibilities.

The objective of this work was to assess the practitioners' prescription patterns of anti-inflammatory drugs in endodontics

MATERIALS AND METHODS

This elaborative and descriptive retrospective study was carried out in our department of Endodontics after obtaining all the ethical clearances from the respective ethical committee. This focused on investigating medical records of patients who had been at the Department between Oct 2017 and nov 2019.

From 400 reviewed records, were selected for the study sample those that met the following inclusion criteria:

1. Records involving endodontic treatment (ET),
2. ET preceded and/or followed by anti-inflammatory prescription,
3. Records with interpretable retro-alveolar radiographs of endodontic treatment.

In all, 100 patients' medical records were selected to assess the endodontic treatment quality from radiographs and anti-inflammatory drug prescriptions. The data collected was processed with Epi-Info. Fr Version 7 and tables and graphs

were produced using Microsoft Excel 2016 software.

RESULTS

This elaborative and descriptive retrospective study was carried out in our department of Endodontics after obtaining all the ethical clearances from the respective ethical committee. Results of the processed data are presented in form of tables: a. Endodontic pathologies, b. Radiographic assessment of the obturation quality, c. Endodontic pathologies and anti-inflammatory prescriptions, d. Root canal obturation and anti-inflammatory prescriptions.

Out of all the records number of acute pulpitis patients were 26%, Sub acute pulpitis were 16%, Pulpo-desmodontal syndrome were 20%, chronic pulpitis were 9%, Acute Apical Periodontitis were 6%, Phoenix abscess were 1%, and Chronic Apical Periodontitis were 22%.

Table 1: Sample distribution by pulp pathology.

Pathology	Number	Percentage
Acute Pulpitis	26	26
Sub-acute Pulpitis	16	16
Pulpo-desmodontal syndrome	20	20
Chronic Pulpitis	9	9
Acute Apical Periodontitis	6	6
Phoenix abscess	1	1
Chronic Apical Periodontitis	22	22
Total1	100	100

Table 2: Anti-inflammatory drug types according to pathology after initial treatment.

	SAIDs		NSAIDS	
	Numbe r	Percentag e	Numbe r	Percentag e
Acute Pulpitis	0	0	30	42
Sub-acute Pulpitis	0	0	12	17
Pulpo-desmodontal	0	0	13	18

syndrome				
Chronic Pulpitis	0	0	7	10
Acute Apical Periodontitis	0	0	6	8
Phoenix abscess	0	0	3	4

Out of all the disease that needed pain control, no SAIDs were prescribed. However, to manage all the types of pain NSAIDs were only prescribed. The total number of 71 analgesics were prescribed. To manage acute pulpitis, 42% of drugs were used, for sub-acute pulpitis 17%, for Pulpodental syndrome 18%, for chronic pulpitis 10%, for Acute Apical Periodontitis 8%, and for Phoenix abscess 4%.

DISCUSSION

As per previous research by Aldous JA et al. and Mickel AK et al. pain handling is an unavoidable order of dental care.^{5,6} Therefore, examining the 100 medical records has shown, during that period, an augmented frequency of acute pulpitis (26% of cases) (Table 1) than any other pulp pathology. Similar trend could be because pain is the main cause of visiting to a dentist.⁷ According to Kane et al. similar trend was observed at the Conservative Dentistry and Endodontics Clinic in Dakar. He reported an increased prevalence of drugs to manage acute pulpitis. This research study had shown a higher trend in consuming analgesics in acute pulpitis (42%) (Table 2) which is in contrast with the study done by Kane et al. In a survey, the surveyed dentists had prescribed anti-inflammatory drugs more than TBAs and analgesics and they were mostly in cases of acute pulpitis (42.7%). G. Romieu et al. reported a precise analysis along with an emergency procedure, whether or not associated with a prescription, can determine initial treatment effectiveness.⁸

Moreover, this research findings show that anti-inflammatory drugs were administered very often (71%) both systemically and topically (Table 2) even after the initial treatment. Ideally, anti-inflammatory drugs should be prescribed either topically or systemically after initial treatment. This

shows how anti-inflammatory prescriptions were misused in 71% of the cases.

In Côte d'Ivoire, pain is the main reason for consulting the endodontic service. Patient management is often preceded and/or followed by anti-inflammatory drugs prescription for relief.⁹ Prescribing anti-inflammatory drugs is common, rightly or wrongly, even after an adequate root canal treatment. However, there is still a significant gap between the level of knowledge and their clinical application possibilities. This, sometimes, leads to erroneous, insufficient, or even imprecise prescriptions, or the risk of adverse effects outweighs the benefit to the patient. In any case, the choice of an anti-inflammatory should take into account not only the diagnosis made but also and above all the desired effect. This requires a proper and controlled approach from the practitioner to anticipate the risks of harmful side effects to the patient.

CONCLUSION

Treatment management often requires the use of anti-inflammatory drugs even after a good and successful endodontic root canal therapy. However, there is still a significant gap between the level of knowledge and their clinical application possibilities. This often leads to imprecise prescriptions which outweighs the benefit to the patient. In case a clinician decides to use an anti-inflammatory drug, it should be made sure that it had a desired effect. This requires a proper and controlled approach from the practitioner to anticipate the risks of harmful side effects to the patient.

CONFLICTS OF INTEREST

The authors declare they have no potential conflict of interest regarding this article

REFERENCES

1. Alf A, Olivieri JG, Duran-Sindreu F, Abella F, Roig M, García-Font M. Influence of preoperative pain intensity on postoperative pain after root canal treatment: A prospective clinical study. *J Dent*. 2016 Feb;45:39–42.

2. C S, B D, P B. An audit of drug prescribing practices of dentists. Indian J Dent Res Off Publ Indian Soc Dent Res. 2004 Apr 1;15(2):58-61.
3. von Arx T. [Mineral trioxide aggregate (MTA) a success story in apical surgery]. Swiss Dent J. 2016;126(6):573-95.
4. Nagendrababu V, Segura-Egea JJ, Fouad AF, Pulikkotil SJ, Dummer PMH. Association between diabetes and the outcome of root canal treatment in adults: an umbrella review. Int Endod J. 2020 Apr;53(4):455-66.
5. J Adou A, N'Dré J, S Mobio G, GS Sika W. Anti-inflammatory drugs prescription in the department of endodontics, university hospital centre of cocody, Abidjan. IP Indian J Conserv Endod. 2020 Nov 28;5(4):181-6.
- 6.
7. Gambhir RS, Brar P, Singh G, Sofat A, Kakar H. Utilization of dental care: An Indian outlook. J Nat Sci Biol Med. 2013;4(2):292-7.
8. Jimmy B, Jose J. Patient Medication Adherence: Measures in Daily Practice. Oman Med J. 2011 May;26(3):155-9.
9. Wöhrl S. NSAID hypersensitivity – recommendations for diagnostic work up and patient management. Allergo J Int. 2018;27(4):114-21.