

## Original Research

### To assess role of triple antibiotic paste in reducing post-operative pain

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#### ABSTRACT:

**Background:** Post-operative pain is a common finding after endodontic treatment. The present study was conducted to assess role of triple antibiotic paste (TAP) as an intra-canal medication in reducing post-operative pain. **Materials & Methods:** The present study was conducted on 46 patients of both genders. In all patients, intracanal medicament was used and post-operative pain was assessed. **Results:** Out of 46 patients, males were 26 and females were 20. Post-operative VAS was 3.4 on 1<sup>st</sup> day, 2.1 in 3<sup>rd</sup> day and 1.4 on 7<sup>th</sup> day. The difference was significant ( $P < 0.05$ ). **Conclusion:** Authors found that triple antibiotic paste is an effective intracanal medicament which can be used to relieve post-operative pain.

**Key words:** Pain, Triple antibiotic paste, Intra-canal

Received: 28 July, 2019

Revised: 22 September, 2019

Accepted: 29 September, 2019

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**This article may be cited as:** Sawhney K. To assess role of triple antibiotic paste in reducing post-operative pain. Int J Res Health Allied Sci 2019; 5(6):29-31.

#### INTRODUCTION

Post-operative pain is a common finding after endodontic treatment, its incidence ranges from 3% to 58%. It may be due to microbial, mechanical or chemical injury to the periapical tissues. It is the main reason why patients seek endodontic treatment; therefore it must be accompanied by efficient relief of pain to be considered successful by both patients and clinicians.<sup>1</sup>

Pain is a subjective experience and difficult to quantify and standardize. Pain is influenced by many factors e.g. personality, behavior, physical and psychological factors; making it a challenge to measure. Several scales and methods have been used for the assessment of pain after endodontic therapy. Among them, numerical, verbal and visual analogue scales are used in most clinical studies.<sup>2</sup>

Antibiotic therapy has become an inseparable part of diverse medical and medical-related treatments, and acts as one of the main fronts against microorganisms. Various antibiotics with divergent formulas are used, for prevention and prophylaxis, to cure active and acute

infections and diseases. There are different routes in classifying antibiotics; for example, these drugs can be divided into several subclasses; cillins, mycins and porines are instances of such divisions.<sup>3</sup>

Triple antibiotic paste (TAP) is a combination of ciprofloxacin, metronidazole and minocycline. Metronidazole, as a nitroimidazole compound, is particularly toxic to anaerobes. Minocycline is bacteriostatic and shows activity against gram-positive and gram-negative bacteria. Ciprofloxacin as a synthetic fluoroquinolone possesses fast bactericidal action and exhibits high antimicrobial activity against gram-negative bacteria.<sup>4</sup> The present study was conducted to assess role of TAP as an intra-canal medication in reducing post-operative pain.

#### MATERIALS & METHODS

The present study was conducted in the department of Endodontics. It comprised of 46 patients of both genders. The study was approved from institutional ethical committee. All patients were informed regarding the study and written consent was obtained.

Data such as name, age, gender etc was recorded. In the first treatment session, intracoronal cavity preparation was performed followed by intra-canal medication placement. In all patients, postoperative pain was assessed at 24, 48 and 72 hours postoperatively using visual analogue scale

(VAS). In the second treatment session, intracanal medications was removed by irrigation using saline followed by obturation. Results thus obtained were subjected to statistical analysis. P value less than 0.05 was considered significant.

**RESULTS**

**Table I Distribution of patients**

Total- 46		
Gender	Males	Female
Number	26	20

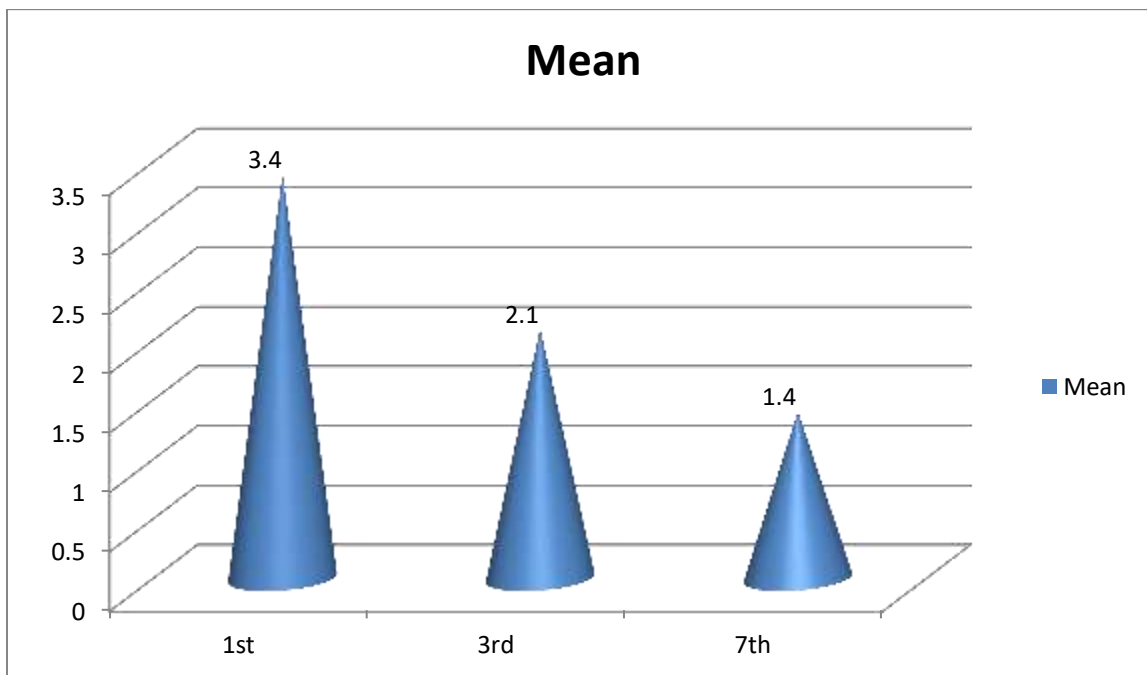
Table I shows that out of 46 patients, males were 26 and females were 20.

**Table II Assessment of pain using VAS**

Days	Mean	P value
1 <sup>st</sup>	3.4	0.01
3 <sup>rd</sup>	2.1	
7 <sup>th</sup>	1.4	

Table II, graph I shows that mean post- operative VAS was 3.4 on 1<sup>st</sup> day, 2.1 in 3<sup>rd</sup> day and 1.4 on 7<sup>th</sup> day. The difference was significant (P< 0.05).

**Graph I Assessment of pain using VAS**



## DISCUSSION

Post-endodontic pain is one of the major problems for both patients and dentists. Development of post-operative pain after root canal treatment frequently occurs.<sup>5</sup> Several risk factors such as gender, age, type of intracanal medication used, presence of pre-operative pain, pulpal and periradicular diagnosis and apical extrusion of debris have been correlated with the occurrence of flare-ups. Preoperative pain was recorded for each patient before starting treatment as it was considered a risk factor that can affect the postoperative pain.<sup>6</sup>

TAP should be used in the safest possible concentration (1 mg/mL) since higher dosages could have undesired results on the stem cells. Even at low concentrations, TAP has unwanted effects on the proliferative capacity and mineralized matrix formation of dental pulp cells and apical papilla cells. According to several studies, a concentration of 0.125 mg/mL of TAP has no cytotoxic effect on the stem cells; thus, it is expected that a concentration of the antibiotic combination with the lowest possible side effects and adequate ability for removing microorganisms, particularly *Enterococcus faecalis* (*E. faecalis*) must be used during endodontic treatment.<sup>7,8</sup> The present study was conducted to assess role of TAP as an intra-canal medication in reducing post-operative pain.

In present study, out of 46 patients, males were 26 and females were 20. Sumanthini et al<sup>9</sup> conducted a study in which group 1: Ledermix paste was used, in group 2: calcium hydroxide paste and in group 3: no dressing was used. Before dismissal, the preoperative pain experienced on the previous night was recorded using a visual analogue pain scale. Patients were then instructed to record the degree of pain experienced 4 h after treatment and daily for a further 4 days. The mean score pain for all three groups was between 42 and 48 prior to treatment being commenced. After 4 days, the pain score for Group 2 was 10, for Group 3 was 7 and for Group 1 was 4. Mean preoperative pain level was 44.4 (of a maximum 100) for all groups, and declined by 50% (to 22.1) after 24 h. Patients in Group 1 (Ledermix) experienced significantly less ( $P = 0.04$ ) postoperative pain than those in the other two groups. There was no significant difference between Group 2 (calcium hydroxide) and Group 3 (no dressing). Under the conditions of this study, painful teeth with acute apical periodontitis that had been dressed with Ledermix paste gave rise to less pain than that experienced by patients who had a dressing of calcium hydroxide or no dressing at all. Ledermix is an effective intracanal medicament for the control of postoperative pain associated with acute apical periodontitis, with a rapid onset of pain reduction.

We found that post-operative VAS was 3.4 on 1<sup>st</sup> day, 2.1 in 3<sup>rd</sup> day and 1.4 on 7<sup>th</sup> day. Walton et al<sup>10</sup> in their

study 84 patients with asymptomatic uniradicular necrotic teeth were randomly assigned into two groups according to the intra-canal medication used: calcium hydroxide group (CH) and triple antibiotic paste with diclofenac potassium group (TAPC). Postoperative pain was assessed postoperatively using Visual Analogue Scale (VAS). Both intracanal medicaments resulted in a statistically significant decrease in mean pain value from 24 to 48 and 72 hours postoperatively. While when comparing both groups, TAPC intracanal medication showed less post-operative pain compared to that of the CH group at 24, 48 and 72 hours with a statistically significant difference at 48 hours only.

## CONCLUSION

Authors found that triple antibiotic paste is an effective intracanal medicament which can be used to relieve post operative pain.

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