

ABSTRACT

To evaluate and compare the anaesthetic efficacy of intraligamentary, intraosseous techniques as the primary anaesthetic technique in maxillary first and second molars with long distobuccal and palatal roots in patients with acute symptomatic irreversible pulpitis – an invivo study.

AIM AND OBJECTIVES :

- The **aim** of the study was to determine the anaesthetic efficacy of intraligamentary, intraosseous techniques as the primary anaesthetic technique in maxillary first and second molars with long distobuccal and palatal roots in patients with acute symptomatic irreversible pulpitis. The **objective** was to evaluate and compare the anaesthetic efficacy of intraligamentary, intraosseous techniques with conventional buccal and palatal infiltration technique – (2% lignocaine with 1:80,000 epinephrine) in maxillary first and second molars with long distobuccal and palatal roots with acute symptomatic irreversible pulpitis – A clinical trial.
- To evaluate the pain present during dentin cutting, pulp exposure and instrumentation of root canals during the endodontic procedure.

METHODOLOGY:

Sixty adult patients diagnosed with acute symptomatic irreversible pulpitis in maxillary first and second molars with age group ranging between 19 to 45 years were selected. They were divided into three groups with (n=20) in each group respectively. The group A (Control group) of twenty patients received buccal and palatal infiltration with 2% lidocaine in 1:80,000 epinephrine, group B (Test group) of twenty patients received intraligamentary injection with 2% lidocaine in 1:80,000 epinephrine, group C (Test group) received intraosseous injection with 2% lidocaine in 1:80,000 epinephrine.

Experimental teeth in all groups were tested for pulp sensibility tests twice before and after the administration of anaesthesia. Patients were asked to rate their pain during dentin cutting, pulp exposure and instrumentation of the root canal system in Heft Parker Visual Analogue Scale (HPVAS). Anesthetic success was determined as no pain or mild pain and moderate to severe pain was determined as anaesthetic failure.

RESULTS:

For **(Group A –Control group)** Three (15%) patients had experienced severe pain. **During dentin cutting**, five (25%) patients had experienced pain and fifteen (75%) patients had no pain. **During pulp exposure**, four (20%) patients had experienced pain and sixteen patients (80%) had no pain. **During instrumentation of the root canals**, four (20%) patients had experienced pain and sixteen patients (80%) had no pain. The overall anaesthetic efficacy of Group A was 85%. For **(Group B- Test Group)** - One (5%) patient had

experienced mild pain, seven (35%) had experienced moderate pain, two patients (10%) had experienced severe pain and ten patients (50%) had no pain . **During dentin cutting**, eight (40%) patients had experienced pain and twelve patients (60%) had no pain. **During pulp exposure**, ten patients (50%) had experienced pain and the rest ten patients (50%) had no pain .**During instrumentation of root canals**, three patients (15%) had experienced pain and seventeen (85%) patients had no pain. The overall anaesthetic efficacy in Group B was 55%. For (**Group C - Test Group**)- Six (30%) patients had experienced mild pain, two (10%) patients had experienced moderate pain, and twelve (60%) patients had no pain. **During dentin cutting**, two (10%) patients had experienced pain, eighteen patients (90%) had no pain. **During pulp exposure**, eight patients (40%) had experienced pain and twelve patients (60%) had no pain. **During instrumentation of the root canals**, all twenty (100%) patients had no pain . The overall anaesthetic efficacy of Group C was 90% The mean root length of palatal root among the three groups was comparatively high 22mm ($P = >.05$) For distobuccal root, the mean root length value was 20.08mm ($P= >.05$) and for mesiobuccal root, the mean root length value was 20.05mm ($P= >.05$)

CONCLUSION:

Anaesthetic efficacy was achieved in all the three groups. Intraosseous injection technique was considered to be better than intraligamentary and buccal and palatal infiltration groups in maxillary first and second molars with long distobuccal and palatal roots in patients with acute symptomatic irreversible pulpitis. Intraosseous injection technique can be considered as a primary mode of

anaesthetic technique in maxillary first and second molars with long distobuccal and palatal roots in patients with acute symptomatic irreversible pulpitis.

KEYWORDS: Local anesthesia, Infiltration, Intraosseous anaesthesia, Intraligamentary anaesthesia, Stabident, lidocaine, maxillary molars, acute symptomatic irreversible pulpitis .