

# ROOT CANAL TREATMENT; FREQUENCY IN DEPARTMENT OF ENDODONTIC IN DENTAL COLLEGES OF KARACHI

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**ABSTRACT... Objective:** To determine the frequency of root canal treatment in endodontic department of dental colleges of Karachi. **Study Design:** Cross-sectional study. **Place and duration of study:** Department of endodontics, Sir Syed Dental College & Hospital, Karachi from 1st May 2011 to 31st August 2011. **Material and Methods:** Of the 400 teeth from 370 individuals (age range 12-50 years) were endodontically treated during four months by faculty members and postgraduate residents enrolled in a specialisation programme in department of Endodontics. All patients were examined clinically and radiographically. For each case, information was collected in specifically designed proforma including location of the affected tooth, age and gender and reasons for endodontic treatment. **Results:** Of the 400 treated teeth, 225 (56.25%) were mandibular and 175 (43.75%) were maxillary teeth. 236 teeth (59.0%) were from females and 164 (41.0%) from males. Significant differences were found between the maxillary and mandibular arch. Molars and premolars required significantly more frequent endodontic treatment than canines and incisors as revealed in fig.1. The most frequently treated tooth was the mandibular right first molar (9.12%) followed by the mandibular left first molar (7.07%). The mandibular first molar was the most common tooth to undergo endodontic procedure than maxillary first molar. The most frequently diagnosed pathosis was irreversible pulpitis (44%), pulp necrosis (22%), retreatment endodontic (17%), elective RCTs (10%) traumatic exposures were (7%) as shown in fig. II. **Conclusions:** Irreversible pulpitis was the most frequent cause of root canal treatment followed by pulp necrosis. Teeth of females required more endodontic treatment than males. The most frequent root canals were carried out in mandibular molars than maxillary molars.

**Key words:** Root canal treatment, Irreversible pulpitis, Necrosed pulp, trauma

## INTRODUCTION

Endodontic therapy defined by the European Society of Endodontology is a procedure that is designed to maintain the health of all or part of the pulp<sup>1</sup>. Root canal treatment is one of the most frequently performed procedures in dental clinics. The main goal of endodontics is to restore the function and esthetic of the involved tooth. From a biomechanical perspective, this means cleaning, shaping, and disinfection that would allow for three-dimensional obturation of the root canal system<sup>2</sup>. One of the main reasons for the failure of root canal treatment is the inadequate removal of pulp tissue and microorganisms from the root canal system<sup>3</sup>. A common cause of root canal treatment is an infected or abscessed tooth, which may result from a deep cavity, periodontal disease, or even a tooth fracture. Sometimes trauma like sharp blow to the mouth can result in damage

to pulp of tooth even without an obvious fracture.

Information on frequency and pattern of a treatment is essential for understanding disease pattern, performance of previous treatments, determining cost effectiveness and devising future facilities based on patients needs<sup>4</sup>. Several studies were conducted in developed countries regarding frequency and reasons for root canal treatment<sup>5</sup>. The aim of current study was to determine the frequency of root canal treatment in department of endodontics in dental colleges of Karachi.

## METHODOLOGY

This study was conducted in Operative/endodontic Department from May 2011 to August 2011 at Sir Syed Dental College & Hospital Karachi. Information on RCT was retrieved from specifically designed proforma

regarding patient age, gender, tooth number, numbers of canals and reasons of the treatment and previous root canal treatment. The proforma were distributed in endodontic department of dental colleges in Karachi. The participants were asked to maintain the records of all root canal treatments using routine methods of diagnosis and treatment planning. The data analysis were performed using the statistical package for social sciences (SPSS Version 16.0).

**RESULTS**

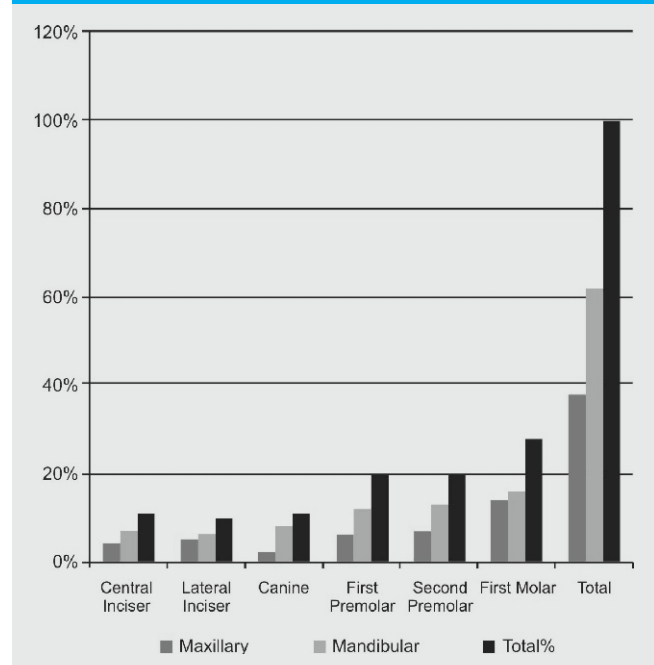
Information was recorded for 400 RCTs. The survey revealed that more females than males received endodontic treatment and that mostly molars and premolars were in need of endodontic treatment. The age of patients ranged from 12 to 50 years with mean age being 30 ± 10 years. Most of the RCTs were carried out in mandibular teeth than maxillary teeth. The most frequent tooth to receive endodontic treatment was mandibular first molars followed by maxillary first molars. The most frequent reason for endodontic treatment was irreversible pulpitis followed by pulp necrosis, retreatments, elective root canal treatment, traumatic pulp.

**DISCUSSION**

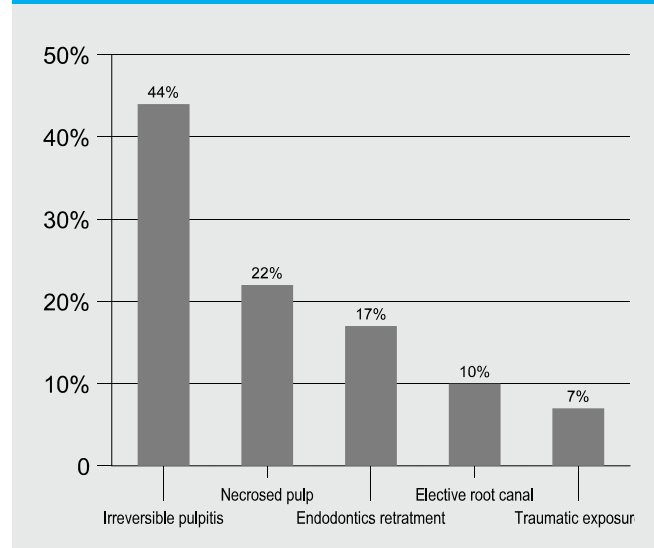
This study has reported of preliminary report on frequency of root canal treatment in department of endodontics in different dental colleges of Karachi. The faculty members and postgraduate residents collected the data as they diagnose and perform most of the RCTs in the Endodontics departments. The current study has revealed that females received endodontic treatment more than their counterparts. The findings of this study, in agreement with research conducted by Al-Omari MA<sup>6</sup> et al. However this study differs from a recent research undertaken in Saudi Arabia where most of the RCTs were carried out on male patients<sup>7</sup>.

The irreversible pulpitis was found to be the most frequent cause followed by pulp necrosis. Our results were similar to those reported in different studies conducted at different institutions and hospitals elsewhere<sup>8</sup>. The reason of root canal following trauma was found to be low similar to some previous studies. The average age of patients was 30 years and trauma was

**Fig-1. Graphical presentation of involved teeth in endodontic procedure**



**Fig-2. Graphical presentation of reasons for root canal treatment**



more likely to involving young individuals<sup>9</sup>. The cause of failed RCTs was mainly inadequate debridement and short obturation<sup>10</sup>. The current study was not focusing on frequency and evaluation of endodontics retreatment further investigation is required in this regard. With the awareness that natural teeth function is more efficient than any replacement. It goes with saying that

acceptance by the public of root canal treatment rather than extraction is on the increase<sup>11</sup>. When comparisons were made in accordance with tooth type, an interesting trend was observed in our study. There is marked contrast to the increasing number of molars teeth being root filled. The number of anterior teeth being root filled was found less, probably as a result reduced caries rate and may be more use of mouth guards in contact sports<sup>12</sup>. The treatment of pulpless teeth became an integral part of dentistry and role of endodontics has greatly broadened in scope in the past 40 years owing to its extremely high predictability of success.

## CONCLUSIONS

It was concluded in current study that an increased trend of endodontic procedure was observed by the age of patients and females had more endodontically treated teeth than males. Irreversible pulpitis was the most frequent cause of root canal treatment followed by pulp necrosis. Significantly lower molars were the most commonly involved in root canal treatment than upper molars teeth. Information about frequency of endodontically treated teeth may help predict future needs for dental treatment in the growing dental population.

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