



A SURVEY ON COMMON ETIOLOGICAL FACTORS IN PEOPLE WITH DIFFERENT AGE GROUPS REQUIRING ROOT CANAL THERAPY AT HYDERABAD.

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Abstract:

There have been very few surveys conducted on various reasons for root canal therapy in India. So we conducted a survey in various dental clinics in HABSIGUDA, HYDERABAD, as no surveys had been conducted till date. The main aim and purpose of this study was to identify the common etiological factors in people requiring conventional root canal therapy of different age groups and also to educate the people to avoid progression of caries or changes as a result of traumatic injuries. OP cards which were collected from various dental clinics had been taken into consideration. Pulpal pathology (56.1%), Traumatic injuries (73.1%) were the most common reasons for the Root canal treatment between 18-25 years of age. Pulpal & Periapical pathology (53.3%), Retreatments (59.5%) were the most common reasons for the Root canal treatment between 26-55 years of age. Intentional RCT's (53.1%) was the most common reason from 56 years onwards.

Keywords: Irreversible pulpitis, Over-obturation, Root canal treatment, Retreatment, Trauma.

Introduction

Nowadays root canal treatment is one of the most frequently performed dental procedures in the clinics. The purpose of root-canal treatment (RCT) is thorough mechanical and chemical debridement of an infected root-canal system, followed by obturating the root canal hermetically to prevent intraradicular microorganisms and their toxins from reaching the periapical tissues.^(1,2,3) The common reasons for performing the root canal treatment are deep decay, chips or cracks in the tooth, periodontal diseases that leads to infected / abscessed tooth.⁽⁴⁾

The information regarding these reasons and treatment plan are necessary for understanding the pattern of disease, performance of prior treatments, determining cost effectiveness and planning future facilities based on needs of the patient.⁽⁵⁾ Several studies were conducted in developed countries regarding the reasons and patterns of root canal treatment.⁽⁶⁻⁸⁾ Till now developing countries are concerned very little or almost no reasons has been done regarding this topic.^(9,10) The developing countries have their specific needs and limited facilities available, so it is necessary that much more studies should be conducted in these countries.⁽⁵⁾ The main aim and purpose of this study was to identify the common etiological factors in people

requiring conventional root canal therapy of different age groups and also to educate the people to avoid progression of caries or changes as a result of traumatic injuries.

Materials and methods:

The study was carried out in various dental clinics in HABSIGUDA, HYDERABAD. OP cards in various dental clinics from 18/4/2019 to 05/02/2020 had taken into consideration. Among them 1350 were indicated to the root canal treatment. They were divided into 3 age groups, Group I = 18 years - 25 years, Group II = 26 years – 55 years, Group III = 56 years onwards, for each age group they were sub grouped in to 5. Sub-Group I = Only Pulpal pathology, Sub-Group II = Both Pulpal & Periapical pathology, Sub-Group III = Retreatment, Sub-Group IV = Intentional Root Canal Treatment, Sub-Group V = Traumatic Injuries.

The following are the criteria for sub groups:

Sub-Group I = Diagnosis of pulpitis either acute or chronic irreversible pulpitis by clinical examination and investigations (radiographs, pulp testing procedures). No evidence of any periapical pathosis or widening of periodontal ligament and no tender on percussion comes under this group.

Sub-Group II = Periapical pathology of the teeth were confirmed by radiographs (radiolucent areas at periapical region) and clinical examination (Any sinus tracts, tender on percussion) comes under this group.

Sub-Group III – Retreatment where patient complaints of pain after root canal treatment, pain might be due to incomplete root canal therapy or under or over obturation.

Sub-Group IV - Tooth necessitating intentional endodontic treatment which were confirmed after careful evaluation by Endodontist, Prosthodontist&Periodontist. Symptomatic teeth with complete obturation.

Sub-Group V –Traumatic injuries which need Root canal treatment (Ellis class III & IV, Avulsed tooth etc)

All the analysis was done using SPSS version 20. A p-value of <0.05 was statistically significant. Comparison of RCT reasons among the age groups was done using Chi-square test.

Results:

The information was recorded from 1350 OP sheets. Males are 723 (53.6%) and Females are 627 (46.4%)(Table 1).The maximum number of root canal treatments were carried out in the group II age group (44.3%), followed by group I (41.7%) and group III (14%) (Table 2).

Pulpal pathology (56.1%), Traumatic injuries (73.1%) were the most common reasons for the Root canal treatment in Group I. Pulpal &periapical pathology (53.3%), retreatments (59.5%) were the most common reasons for the Root canal treatment in Group II. Intentional RCT's (53.1%) was the most common reason in Group III.

Table 1: Gender distribution of patients for Root Canal Therapy.

Total number	Male	Female
1350	723 (53.6%)	627 (46.4%)

Table 2: Age distribution of patients for Root Canal Therapy.

Age groups (years)	Male	Female	Total
Group I (18-25)	352 (26%)	212 (15.7%)	564 (41.7%)
Group II (26-55)	253 (18.7%)	346 (25.6%)	599 (44.3%)
Group III (56 onwards)	118 (8.7%)	69 (5.3%)	187 (14%)

Table 3: Various reasons for Root Canal Therapy of different age groups.

Age (Years)	Only Pulpal Pathology	Pulpal & periapical pathology	Retreatment	Intentional RCT	Traumatic Injuries	p-value
18-25	299 56.1%	145 31.9%	36 31.0%	8 5.6%	76 73.1%	<0.001; Sig
26-55	201 37.7%	242 53.3%	69 59.5%	59 41.3%	28 26.9%	
>56	33 6.2%	67 14.8%	11 9.5%	76 53.1%	0 .0%	

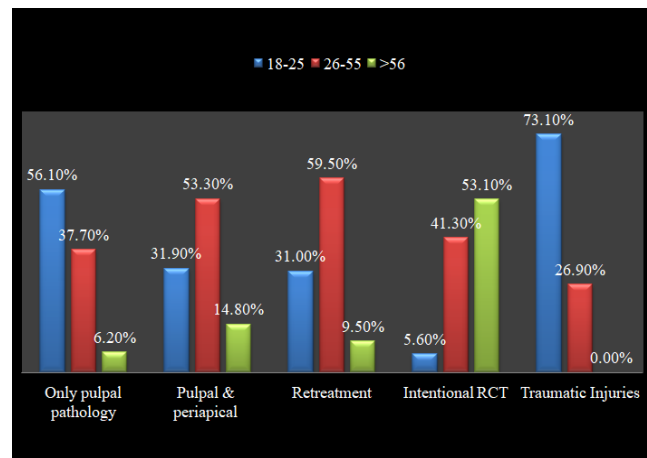


Figure 1: Graphical presentation of various reasons for Root canal Treatment in different age groups. **Discussion:**

This study provided valuable information about most common reasons for undergoing root canal treatment at various dental clinics in HABSIGUDA, HYDERABAD. In the study there was variation of sex, RCTs which were carried out in the dental clinics consists of more male patients than female patients. Serene TP et al had done a study on frequencies of endodontic therapy in which most of the RCT's were done on the male patients.⁽⁶⁾ Umaishlal et al had done a study in which there was no variation of sex, almost equal percentage of RCTs were carried out for both male and female patients.⁽¹⁾ However, this differs from some previous studies where the number of female patients was higher.^(7,8)

Irreversible pulpitis was the most common causes for seeking root canal treatment by the patients.^(1,5,6,8,9) A possible explanation to this can be because in early age necrosis and other factors are less common. Reversible pulpitis mostly progresses to irreversible state and if not treated it may progress to necrosis. These results are in agreement with the previous studies conducted in Saudi Arabia and elsewhere. Nevertheless, pulpitis and necrosis of pulp could be considered as is natural sequelae of untreated dental caries.⁽¹¹⁻¹³⁾ Tooth undergoes chronic trauma over a period of time which may include micro-leakage, failed restorations, abfraction, abrasion and excessive occlusal forces, self-medication which will modify to further complications.

The cases which were reported for failure of root canal treatments; it was mainly because of short-obturations, when compared with over-obturations. It may be argued that in over-obturation, the canals are cleaned completely and that extruding material provides good apical seal and is well tolerated by periapical tissues.⁽¹³⁾ The intentional root canal treatment was performed in this study to treat wasting diseases by which tooth structure can be saved.

Similar to the studies reported earlier,^(6,7,8) trauma was a cause for root canal treatments. This is due to patients with this age (Group I) are more prone to accidents. It requires further education of patients to seek professional advice at early stages. In traumatic conditions, irrespective of clinical conditions they should seek professional advice and regular check up to promote endodontic therapy at first evidence.

After conducting the survey it is clear that dental care should be expanded towards people and adequate treatment should be provided. The importance of regular dental visits should be reinforced. Caries preventive program strategies should also be strengthened especially among people with less education and awareness regarding dental health. Dental screening and regular awareness programs regarding caries and its prevention should also be held among such people.

Conclusion:

Pulpal pathology (56.1%), Traumatic injuries (73.1%) were the most common reasons for the Root canal treatment between 18-25 years of age. Pulpal & periapical pathology (53.3%), retreatments (59.5%) were the most common reasons for the Root canal treatment between 26-55 years of age. Intentional RCT's (53.1%) was the most common reason from 56 years onwards.

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