Pulpotomy for Irreversible Pulpitis? Preliminary qualitative findings in the USA

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Introduction

Irreversible pulpitis is an acute dental emergency posing several challenges to dental professionals in primary care (1). Pulpotomy is a vital pulp therapy procedure consisting of the removal of the inflamed part of coronal pulp (partial or full) and the application of a biomaterial (Bi or Tricalcium silicatebased cements) directly onto the pulp tissue after haemostasis is achieved (2,3). This procedure can be a less complex alternative option to root canal treatment when irreversible pulpitis is treated at an early stage without signs of apical periodontitis or pulp necrosis (4). This study investigates dental practitioners' current approaches and beliefs towards the clinical management and conservative treatment of irreversible pulpitis with normal apical tissues.

Methods

Study Design and Participants

This is a cross-sectional survey with dental practitioners, members of the National Dental Practice-Based Research Network in the United States.

Data Collection

Members of the network were invited to participate in an online Quick Poll through email and social media channels. 422 individuals submitted survey responses.

Results

Approximately, how often do you diagnose irreversible pulpitis in your clinical practice per month?			
1 - 5	218	52%	
6 - 10	103	25%	
>10	95	23%	

How would you and your patients feel about pulpotomy as a definitive treatment option for the management of irreversible pulpitis compared to conventional root canal treatment, assuming that there is sufficient tooth structure and there is no need for post retention of the restoration?

Measures and Data Analysis

The survey content included a description of a clinical scenario of a patient with irreversible pulpitis with normal apical tissues. The dental practitioners were asked five questions about their experience dealing with such cases. The data were collected through a web survey in Constant Contact, a digital and email marketing platform. Data were analyzed using descriptive statistics in Stata/SE 17.

When irreversible pulpitis and normal apical tissues is diagnosed in a permanent tooth, what is/are your most common clinical management(s)?

Prescribe or recommend	126	30%
analgesics		
Prescribe antibiotics	83	20%
Access the pulp and place a	77	19%
sedative temporary dressing		
Perform a pulpotomy	83	20%
Perform a root canal therapy	319	77%

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Should you decide to perform a pulpotomy, which material would you use to complete this procedure?

Calcium Hydroxide	101	44%
Mineral Trioxide	55	24%
Aggregate (MTA)		2770
Biodentine	37	16%
Formocreosol	49	21%
ZOE	42	18%
Glass ionomers	44	19%
l do not use pulpotomy		
as part of my clinical	0	0%
practice		
Other	0	0%

Both my patients and I would	182	44%
be in favour	102	11/0
I would be in favour but not	100	24%
patients	100	2-770
Patients would be in favour	12	3%
but not myself	١Z	J /0
Neither patients nor I would	110	28%
be in favour	110	2070



Periapical radiograph of lower left first molar with deep carious lesion reaching the coronal pulp with diagnosis of irreversible pulpitis with normal apical tissues

Including the initial emergency appointment, how many appointments are required for you to complete root canal treatment on a molar tooth on average? (does not include final restoration)

1 appointment	92	22%
2 appointments	128	31%
3 appointments	12	3%
More than 3 appointments	0	0%
I would refer the case to a specialist	132	32%
I do not perform root canal treatment on any	51	12%
teeth		

Conclusions

This preliminary study highlights the interest and potential for the use of pulpotomy as a permanent treatment for the clinical management of irreversible pulpitis in permanent posterior teeth. Further research is needed to explore the potential for future implementation of such technique.

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