

Knowledge and Management of Attitude Regarding Dentin Hypersensitivity Among Dentists in City of Bangalore

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Abstract

Aim: The aim of the study was to assess the knowledge and management protocol of dentin hypersensitivity among dentists in the city of Bangalore. **Materials and Methods:** The study involved dentists from private and public sectors in city of Bangalore. The following data were requested from the surveyed dentists using an anonymous questionnaire; knowledge on triggering factor, type of pain, diagnosis, preventive and curative procedures and recent management protocol. **Results:** Out of the 120 dentists who received the questionnaire, 99 returned properly filled forms. About half of the dentists (53%) reported that dentin hypersensitivity was due to loss of enamel. Mechanical stimulus such as faulty toothbrushing was reported by 6 % of them. 54 dentists used air blast to elicit DH pain. The first modality of treatment reported was use of desensitizing toothpaste (72%) followed by patient education (19%) and restoration (8%). Regarding the recent advances in this field, there was paucity of knowledge amongst the clinicians. Only 2% of them mentioned the use of remineralising desensitizers such as Teethmate as an effective treatment modality. **Conclusion:** We suggest incorporation of basic science knowledge on orofacial pain and competencies to manage painful conditions like dentin hypersensitivity. Also, Health regulatory institutions ought to make proceeding with dental training a necessity to safeguard the dental licensure.

Keywords: Dentin Hypersensitivity, Knowledge, Management, General Dental Practitioners.

Introduction

Pain is an unpleasant experience that perhaps motivates the individual way more than the other life expertise. Dentin hypersensitivity (DH) is one of the most seasoned recorded protestations of uneasiness to mankind.¹The prevalence of DH is high enough (72.5% to 98%) to warrant the development of effective treatment. According to many authors, DH influences day by day life of subjects as a result of the transient but recurrent pain elicited during oral activities like eating, drinking, brushing of teeth and even breathing. Various treatment strategies including self-care as well as professional treatment have been postulated to treat DH.²

In dental education institutions of developing

countries efforts are concentrated in providing knowledge and management skills on the most common dental diseases (caries, periodontal disease, etc.) to dental students. In any case, conditions like DH are not formally educated to dental students. Consequently, from a scholarly perspective, an error exists between the relative recurrence of DH, its related grimness and the dubious viability of accessible treatment on one hand, and the limited attention it receives within the undergraduate dental timetable on the other hand. Proceeding with dental training may significantly supplement the weaknesses identified with the impediments of dental practitioners in such manner. Various reviews have been attempted in created nations to survey dental specialist's information on DH. For example, Gillam et al³, announced after effects of

a study on 181 UK dental specialists' impression of DH and information of its treatment. They achieved the conclusion that all around most dental practitioners seemed to comprehend the etiology of DH and gave rectify encourages to their patients. Amarasena et al⁴ in their review including 284 Australian private dental specialists found that their impression of DH is by and large predictable with the current logical accord regarding this matter. Then again, in an overview on 331 dental specialists and 211 hygienists, the Canadian Advisory Board on Dentin Hypersensitivity (2003) distinguished 14 key learning holes identified with the causes, analysis and administration of DH.⁵

Therefore the aim of the study was to assess the knowledge and management protocol of dentin hypersensitivity among dentists in the city of Bangalore.

Methodology

The study involved 120 dentists from both private and public sector. Data collection required the use of an anonymous questionnaire made up with few basic headings. These included mainly knowledge on triggering factor, diagnosis, preventive and curative procedures and recent advances of management.

The questionnaire was given to all the targeted dentists with an accompanying letter emphasizing the confidentiality, and asking them to fill it out as objectively as possible. The reviewed dental specialists were additionally asked for to return back the form to the examiners. An update was later sent to the non-respondent 2 weeks and 1 month after the assumed date of gathering of the questionnaire and lastly 99 dental practitioners reacted to the survey. The information gathered were entered in a spreadsheet and afterward exchanged to SPSS version 20 (IBM Corp, Armonk, NY) for examination.⁶

Results

99 dentists who responded to questionnaire returned properly filled forms. More than half of the practitioners were from private teaching institutions hospitals. About half of the dentists

(53%) reported that dentin hypersensitivity was due to loss of enamel. Mechanical stimulus such as faulty toothbrushing was reported by 6 % of them.

Regarding the diagnosis of dentin hypersensitivity it appeared from the response received that 60% of clinicians diagnosed about 60% of patients with DH in their practice. 54% dentists used air blast to elicit DH pain (Table 1).

Regarding management of DH 55% were of the opinion of tubular occlusion as the mode of action of treatment modality. The first modality of treatment was use of desensitizing toothpaste (72%) followed by patient education (19%) and restoration (8%) (Table 1).

Amongst dentriferics SHY-NM was prescribed by 50% of the clinicians. 69% of the dentists mentioned novamin as the most effective constituent against DH with only 2 % in support of hydroxyapatite (Fig. 1).

Majority of clinicians recommended their patients to use dentriferics twice a day.

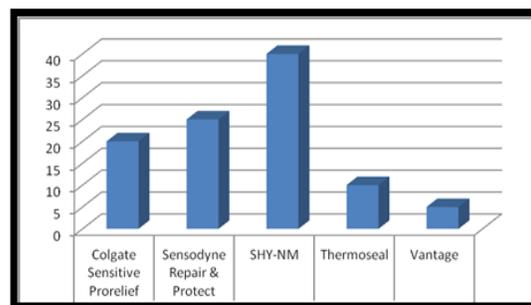


Fig. 1 Percentage of dentists prescribing different desensitizing toothpastes

With regards to patient education the most common approach reported was instructions followed by demonstrations. Models, posters and audiovisual aids were the least to be used. In case of severe lesions, 58% clinicians reported restoration to be the most appropriate treatment modality followed by application of bonding agents (26%). Amongst the bonding agent 58% dentists mentioned use of 5th generation compared to 6th generation (13%) (Fig. 2).

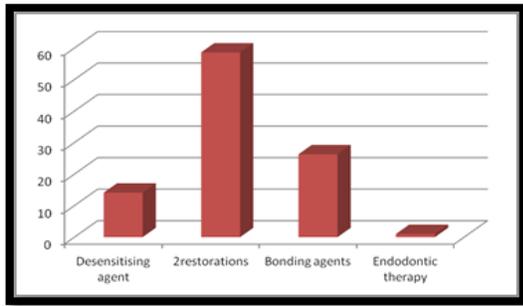


Fig. 2 Percentage of dentists using the most common treatment modalities according to them

Regarding the knowledge of recent treatment modalities other than lasers only 16% dentists gave a positive response, majority of which came up with recent dentrifices such as SHY-XT and remin pro. Only 2 % clinicians mentioned the use of HAP containing agents like teethmate desensitizer. Regarding the follow up period patient satisfaction and recurrence rate, 50% of dentists followed their patients once in every 6 months where majority of patients seem to be satisfied with their treatment but reported with 40% recurrence rate.

Table 1. Frequency and percentage of dentists responding to the given diagnostic questions of the questionnaire

		Frequency	Percent
What are the potentially used diagnostic aids	Cold water jet	25	25.3
	Air blast	54	54.5
	Use of explorers	11	11.1
	verbal rating scale	9	9.1
What according to you is the most appropriate mechanism of action for managing dentin hypersensitivity	Nerve depolarisation	24	24.2
	Formation of hydroxyapatite	11	11.1
	Tubule occlusion	55	55.6
	Remineralising agent	9	9.1

Discussion

As indicated by Dowell and Addy⁷, 1 adult out of 7 are reported suffering from DH. This condition is also reported to represent 1/5th of dental disease related emergencies.⁸ It is therefore important for any dentist to have thorough understanding of its features, initiating factors and management options. The survey reported herein was concerned with the assessment of dentist's knowledge on this condition.

The results of the present study indicated that 53% of the surveyed dentists identified loss of

enamel as main triggering factor for DH. Mechanical stimuli were not referred to by the majority of them although pain occurring during daily life activities such as tooth brushing can provoke pain from sensitive dentin. Similar discoveries were accounted for in a Moroccan overview including 100 dental practitioners.⁹ The lack of knowledge regarding triggering factors was likewise revealed in a before Canadian review distributed 10 years back with right around 2/3rd of the overviewed dental practitioners recognizing bruxism and malocclusion as triggers of DH.⁵ This finding was

however contradictory in the present study as despite their poor understanding of triggering factors, (68%) used mechanical stimuli (probing) during clinical examination to diagnose DH, whereas, 54 clinicians used air spray as the main diagnostic aid.

Regarding the management, 55% of dentists considered tubular occlusion as the mode of action of treatment modality followed by 24% in favour of nerve depolarization. This is in accordance with Ling et al who have mentioned the above two modalities for DH treatment, although tubule occlusive therapies have been frequently proposed because it is believed that sealing the dentinal surface diminishes the movement of fluids inside the tubule and hence is capable of reducing DH.¹⁰

It appears also from the questionnaire that the majority of dentists favor a treatment modality with desensitizing agents (72%). These outcomes are reliable with those revealed by Schuurset al¹¹ who found in their study of 400 Dutch dental specialists, that 77% instructed the utilization of home-care methods like therapeutic toothpastes. Gillam et al¹² additionally revealed utilization of tooth paste as a prevalent decision by UK dental practitioners. Truth be told, Orchardson et al¹³ and Jackson et al have supported the utilization of desensitizing dentifrice with strontium chloride and potassium nitrate for summed up affectability.

When there is no loss of dental structure, dentinal adhesives in the form of bonding agents and varnishes can be indicated. Amongst the bonding agents to be used, 58% dentists mentioned use of 5th generation compared to 6th generation (13%). Resin-based dental adhesive systems can provide a more durable and long lasting dentin desensitizing effect. The adhesive resins can seal the dentinal tubules effectively by forming a hybrid layer. Various clinical studies have demonstrated the effectiveness of adhesives in management of DH.¹⁴

58% clinicians reported restoration to be the most appropriate treatment modality followed by application of bonding agents (26%). Resin composites and glass ionomer cements, as well as

varnishes and dentinal adhesives work as fillings, sealing the entrances of the open dentinal tubules and blocking sensitivity by the formation of a sealing covering. Nevertheless, a restorative material must only be used when there is a loss of dental structure.¹⁵ Powell, Gordon and Johnson¹⁶ found significantly diminished post-operative sensitivity to all the stimuli when using only a restorative material, glass ionomer, or resin composite, or a combination of resin composite with glass ionomer lining. After six months, the reduction in sensitivity of the lesions to air was between 57 and 78%; to heat 80%: and to cold between 57 and 76%. However, there are controversies with regards to restoration of non-carious cervical lesions. More invasive therapies, such as restorations, dental pulp removal, etc, can be the treatment of choice if attempts to achieve pain remission with a more conservative procedure fail.¹⁷

Regarding the recent advances in this field, there was paucity of knowledge amongst the clinicians. Only 2% of them mentioned the use of remineralising desensitizers such as Teethmate as an effective treatment modality. These agents have also shown to enhance the shear bond strength of composite resins to desensitized dentin (unpublished data). Further clinical studies are needed in this field for proper management of the condition.

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