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Problems Reported by Patients with Dentin Hypersensitivity Before/After Treatment

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Introduction

Dentin hypersensitivity is an oral complaint frequently reported in dental practice (Fig. 1 and 2). It is characterized by a short and sharp pain that occurs in the presence of thermal, chemical, evaporative, tactile, or osmotic stimuli, ceasing after their removal (1,2). A substantial segment of patients (10-25%) (3,4) experience discomfort to an extent that it interferes with their eating, drinking, and oral hygiene habits, as well as sometimes even with breathing. In these patients, hypersensitive teeth are associated with impaired oral health-related quality of life (5). It is not known what oral health-related problems are important to patients with hypersensitive teeth. It is also not known what problems change with treatment and what the magnitude of the changes are.

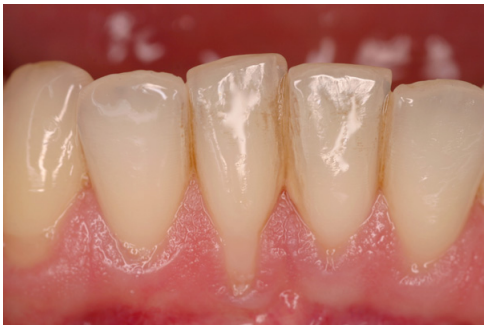

Fig. 1: Single exposed tooth neck causing dentin hypersensitivity

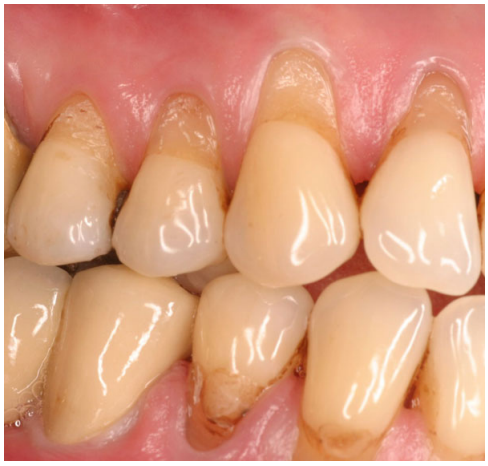

Fig. 2: Clinical form of hypersensitiv dentin surfaces due to gingival recession

Objectives

Using the Oral Health Impact Profile, we investigated the frequency of oral health-related problems reported by patients with dentin hypersensitivity and whether problem frequency improved after treatment.

Material and Methods

Subjects Study participants were 537 patients presenting at 163 German dental offices because of hypersensitive teeth and reacting positive to an air stimulus applied by the dentist. Patients in this study were informed about the purpose of the study targeting the assessment of hypersensitive teeth and oral hygiene.

Use of the Care System:
Every study patient received an elmex® SENSITIVE care system for home use (Fig. 3). The care system contained an AmF-containing toothpaste, a mouthrinse (AmF/KF), and a toothbrush specially designed to treat hypersensitivity (elmex® SENSITIVE). The patients were asked to use the system for their oral hygiene twice a day as recommended by the manufacturer.

Data Collection:
Oral health-related quality of life was assessed using the German version of the Oral Health Impact Profile, OHIP-G. The OHIP-G contains 49 items. The patients completed the questionnaire before and after 21 days home use of the care system. The most prevalent problems among the 49 OHIP items before and after treatment, as well as problems that changed the most with treatment were calculated. In addition, OHIP domain scores before and after treatment were computed.

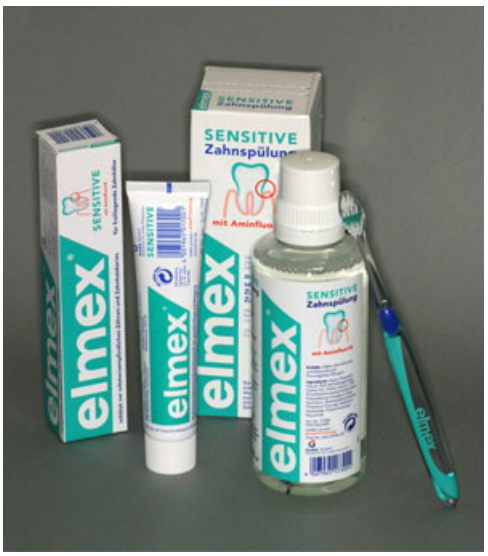

Fig. 3: elmex® SENSITIVE care system: toothpaste, mouthrinse, and toothbrush

Results

The five most often reported problems before treatment had a prevalence of > 15% (Table 1). After 21 days of home use of the three products to treat hypersensitive teeth, the most reported problems had a prevalence of < 19% (Table 2). Problems that changed most with treatment are shown in Table 3.
Problems most frequently reported as occurring "never" before and after treatment were: unable to do anything and avoid going outside.
Table 4 shows the following changes in OHIP domain score means:
The changes in each OHIP domain mean were significant ($p < 0.05$).
Table 5 shows the changes in OHIP domain score means in men and women. No differences in gender could be observed before and after treatment ($p < 0.05$).

Before Treatment

	Item	n	%	
1.	qol 13	272	50.7	hypersensitive teeth
2.	qol 7	134	25.0	food catching in the teeth
3.	qol 16	90	16.8	uncomfortable to eat
4.	qol 19	88	16.4	worried by dental problems
5.	qol 15	83	15.5	sore gum

Tables 1-3: Five most reported problems before (Table 1) and after treatment (Table 2) and problems that changed the most with treatment (Table 3). (*decrease in the number of patients reporting this problem following treatment)

After Treatment

	Item	n	%	
1.	qol 13	103	19.2	hypersensitive teeth
2.	qol 7	81	15.1	food catching in the teeth
3.	qol 19	37	6.9	worried by dental problems
4.	qol 15	33	6.1	sore gum
5.	qol 1	28	5.2	difficulties to eat

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Problems that changed the most with treatment

	Item	n*	% decrease	
1.	qol 13	169	62.1	hypersensitive teeth
2.	qol 16	67	74.4	uncomfortable to eat
3.	qol 7	53	39.6	food catching in the teeth
4.	qol 15	51	61.4	sore gum
5.	qol 19	50	56.8	worried by dental problems

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	Domain	Before Treatment	After Treatment	Significance
1	Functional limitation	6.9	4.8	< 0.001
2	Pain	10.8	6.6	< 0.001
3	Psychological discomfort	4.3	2.5	< 0.001
4	Physical disability	4.7	2.8	< 0.001
5	Psychological disability	3.4	1.9	< 0.001
6	Social disability	1.7	1.0	< 0.001
7	Handicap	2.7	1.6	< 0.001

Table 4: Changes in OHIP domain means before and after treatment

		Before Treatment		After Treatment	
	Domain	female	male	female	male
1	Functional limitation	6.7	7.5	4.6	5.5
2	Pain	11.0	10.3	6.6	6.9
3	Psychological discomfort	4.4	4.0	2.4	3.0
4	Physical disability	4.7	5.0	2.7	3.3
5	Psychological disability	3.5	3.3	1.9	2.1
6	Social disability	1.7	1.7	1.0	1.1
7	Handicap	2.7	2.7	1.5	1.9

Table 5: OHIP domain scores before and after treatment in men and women

Conclusions

When comparing before and after treatment prevalence of OHIP items in patients with hypersensitive teeth, decreases in oral health problems occurred in all OHIP domains.

Literature

1. Canadian Advisory Board on Dentin Hypersensitivity. Consensus-based recommendations for the diagnosis and management of dentin hypersensitivity. J Can Dent Assoc. 2003; 69: 221-226.
2. Addy M. Etiology and clinical implications of dentine hypersensitivity. Dent Clin North Am. 1990; 34: 503-514.
3. Gillam DG, Bulman JS, Eijkman MA, Newman HN. Dentists' perceptions of dentine hypersensitivity and knowledge of its treatment. J Oral Rehabil. 2002; 29: 219-225.
4. Schuurs AH, Wesselink PR, Eijkman MA, Duivenvoorden HJ. Dentists' views on cervical hypersensitivity and their knowledge of its treatment. Endod Dent Traumatol. 1995;11:240-244.
5. Bekes K, John MT, Schaller HG, Hirsch C: Oral health-related quality of life in patients seeking care for dentin hypersensitivity. J Oral Rehabil. 2009; 36: 45-51.

The study was supported by GABA Germany.

Abbreviations

OHRQoL = Oral health-related quality of life

This Poster was submitted by Dr. Katrin Bekes.

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Results

Before treatment				
	Item	n	%	
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Table 5 shows the changes in OHIP domain score means in men and women. No differences in gender could be observed before and after treatment ($p < 0.05$).

	Domain	Before Treatment: female	Before Treatment: male	After Treatment: female	After Treatment: male
1	Functional limitation	8.7	7.5	4.6	5.5
2	Pain	11.0	10.3	6.6	6.9
3	Psychological discomfort	4.4	4.0	2.4	3.0
4	Physical disability	4.7	5.0	2.7	3.3
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