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Clinical Effectiveness of a Strontium Chloride Containing Desensitizing Agent

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Introduction

Cervical dentin sensitivity can be defined as a painful response to an external stimulus applied to the buccal surface around the cervical region of the tooth (1). Dentin sensitivity may arise as a result of loss of enamel and root surface denudation with exposure of the uncovered underlying dentin. Gingival recession and subsequent root surface exposure allws more rapid and extensive exposure of dentinal tubules because the cementum overlying the root surface is thin and easily removed (2,3). The ultimate goal in the treatment of dentin hypersenitivity is the immediate and permanent allevation of pain by using desenitizing agents. These can be calssified into several main groups: neural stimulus blockers, protein precipants, tubule occluding agents and sealants (4,5). However, none of them has been shown to be consistently effective.

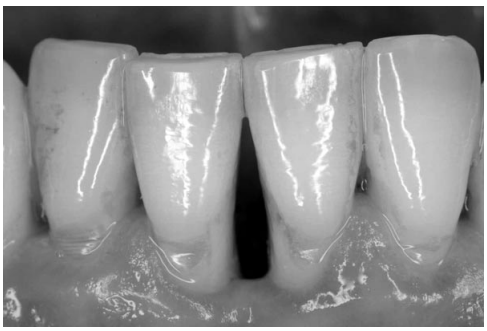

Fig. 1: Clinical form of hypersensitiv dentin surfaces due to gingival recession.

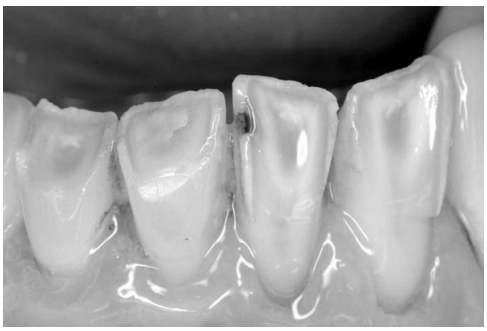

Fig. 2: Clinical form of hypersensitiv dentin surfaces due to abrasion.

Objectives

The aim of the present randomized double-blind, multi-center investigation was to evaluate the clinical efficacy of a strontium chloride hexahydrate containing desensitizer HYPOSEN (lege artis Pharma GmbH) over a period of 24 weeks.

Material and Methods

142 patients with hypersensitivity were included in the double-blind, randomized, comparative placebo study. Eleven different dental clinics were involved. All dentist were calibrated. Each patients exhibited at least two hypersensitive teeth with uncovered dentin surfaces. One tooth was treated with HYPOSEN desensitizer, the other tooth was treated with a placebo. All materials were applied as recommended by the manufacturer.
Levels of hypersensitivity were assessed after 2, 8, 12 and 24 weeks by cold air stimulus and tactile stimulus with an dental explorer. Statistical analysis was carried out using McNemar test at a significance level of 5%.

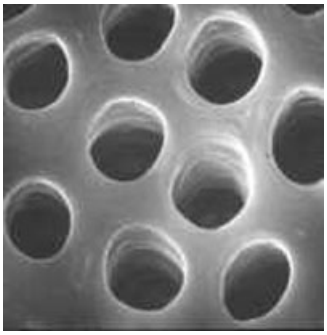

Fig. 3: Denuded cervical dentin surface. Clearly visible the open dentin tubuli.

Fig. 4: The used desenitizing agent HYPOSEN including two components: HYPOSEN desensitizer and HYPOSEN cover sealant.

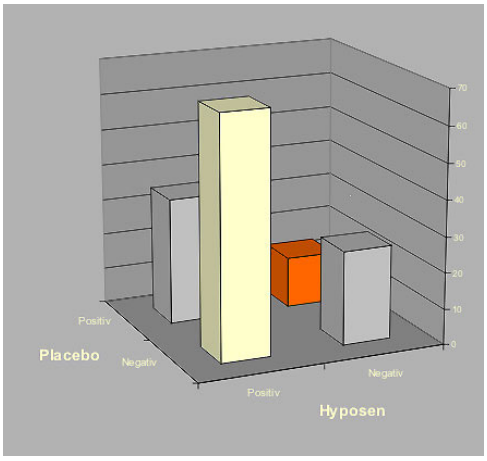

Fig. 5: Graphically expression of the results showing positive and negative effects of HYPOSEN and placebo treatment on dentin sensitivity after 24 weeks.

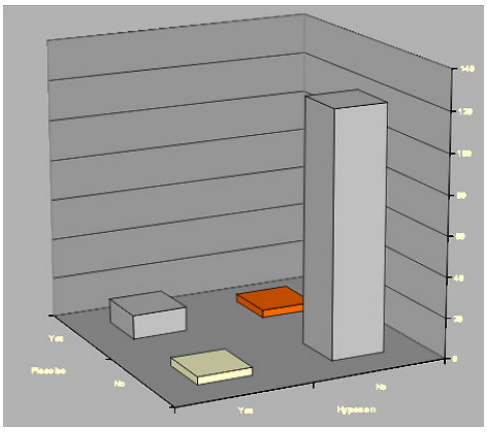

Fig. 6: Graphically expression of the reported impairment of taste after application of both agents: HYPOSEN and placebo.

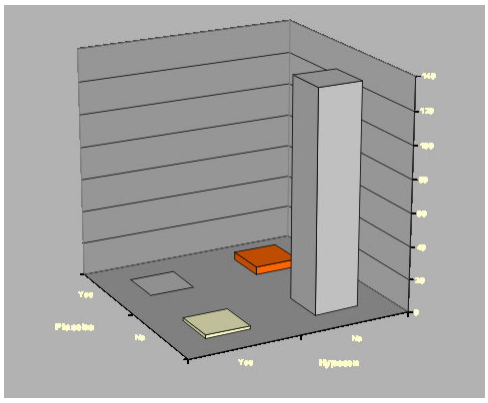

Fig. 7: Graphically expression of reported side effects. No difference could be detected betweeen HYPOSEN and placebo ($p<0.05$, McNemar test).

Results

After 12 weeks in 102 patients (71.8%) a reduction of discomfort and pain could be observed. 24 weeks after application of the desensitizing agent in 95 patients (66.9%) a reduction of hypersensitivity could be detected. Compared with the placebo group statistical analysis showed a significant positive effect of Hyposen after 12 and 24 weeks ($p< 0.05$, McNemar Test).

Conclusions

It can be concluded that using the strontium chloride containing Hyposen for the treatment of hypersensitive dentin surfaces is an easy, safe and effective alternative to other desensitizing agents and treatment procedures.

Literature

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