Clin Oral Invest (2013) 17 (Suppl 1):S1–S2
DOI 10.1007/s00784-012-0917-8

REVIEW

Foreword

A. Lussi · E. Hellwig

Received: 15 October 2012 / Accepted: 21 November 2012 / Published online: 24 December 2012

Keywords Dentin · Hypersensitivity · Prevalence · Hydrodynamic theory

In early 2011, GABA International initiated a committee for the planning of a state-of-the-science workshop on dentin hypersensitivity. It was decided that this workshop should cover all important aspects of this subject of growing concern. Speakers form different countries came together to present data and overviews on different aspects and discuss them thoroughly with the participants Finally, a consensus was reached and a decision tree was developed.

In this special issue of Clinical Oral Investigations, the overviews and outcomes of the discussions are presented as guidance for up-to-date prevention and therapy. This issue will assist the dental practitioner in daily practice and may stimulate future research.

Dentin hypersensitivity has received in the past years a lot of attention, be it by the patients, the dental practitioners, or the researchers of the universities and companies.

The management of a patient complaining of dentin hypersensitivity is not easy. The pain symptoms that are typically experienced by the patient are very unpleasant or even painful for them. Dentin hypersensitivity is a short, sharp pain that quickly dissipates. It arises from dentin exposed to the oral cavity and cannot be linked to any other dental defect or disease. There are conflicting data in relation to the prevalence values for dentin hypersensitivity, due to different sample selection bias or diagnostic criteria. However, prevalence values vary from as low as 3–5 % or are above 90 %, depending on the population and method used to assess dentin hypersensitivity. Therefore, it is a subject of high interest for clinicians and researchers.

For a better clinical management of dentin hypersensitivity, it is essential that clinicians fully understand the etiology and risk factors behind this condition. Nowadays, the most acceptable theory explaining dentin hypersensitivity is the hydrodynamic theory. It states that the flow of the fluid present inside dentinal tubules is responsible for the sensation of pain. Therefore, when sugar, acids, or cold air come into contact with the exposed dentinal surface, osmotic changes or the dried dentin causes a change on the dentinal fluids' flow, consequently leading to the sensation pain.

It is essential to correctly diagnose dentin hypersensitivity in order to have a successful treatment strategy and, accordingly, successful pain relief for the patients. Dentin can be exposed to the oral environment due to gingival recession, periodontal disease, or loss of enamel due to abrasion, erosion, and caries. So, dental professionals must rely on clinical tests carried out during the clinical exam as well as on the patient's report of the pain. It is also recommended to use at least two different kinds of stimuli during the clinical exam. Among the numerous kinds of clinical tests, it is generally accepted that, for the clinical setting, the tactile method, consisting of gently passing an explorer over the dentin surface, as well as spraying a jet of air on the isolated tooth are suitable diagnostic tools.

It is important to keep in mind that dentin hypersensitivity causes pain, which can affect the patient's daily activities. A negative impact of dentin hypersensitivity on patient's oral health-related quality of life was reported, although only few studies were carried out. This should be taken into consideration when planning the management of dentin hypersensitivity.

The management of dentin hypersensitivity should start with the most inexpensive, noninvasive, easily

A. Lussi (✉)
Department of Preventive, Restorative and Pediatric Dentistry, University of Bern, Bern, Switzerland
e-mail: adrian.lussi@zmk.unibe.ch

E. Hellwig
Albert-Lugwigs University, Freiburg, Germany

applicable, and reversible option of preventive techniques. If such fail to stop dentin hypersensitivity or do not have the desired effect on stopping the pain on the patient, other professional measures such as composite restorations of the respective defect are applied. The least invasive options have priority, and these options should aim at closing the dentin tubules, diminishing the fluid flow within these tubules and thereby desensitizing the affected area. However, well-planned randomized controlled clinical studies concerning the long-lasting efficacy of occluding products are still lacking. Adequate preventive methods are imperative for a successful management.

We would like to thank GABA International for giving us the support for this workshop, the participants for the fruitful and intensive discussions, and the authors for providing high-quality papers. Special thanks go to the reviewers and to Professor Gottfried Schmalz, Regensburg, for his invaluable work as guest editor.

Conflict of interest None.