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LETTER TO THE EDITOR

Does the scientific literature provide sufficient information on incisors affected by molar incisor hypomineralisation?

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Dear Editor-in-Chief,

Molar incisor hypomineralisation (MIH), which was defined for the first time by Weerheijm et al. (2001) twenty-one years ago as a qualitative, hypomineralised enamel defect in which at least one permanent first molar is affected and the condition is frequently observed in permanent incisors, remains an important health problem. Although its etiology has not been fully elucidated, the effects of many genetic, epigenetic, pre-, peri-, and post-natal systemic factors on the occurrence of the disease have been investigated (Garot et al. 2022). Although the quality and number of prevalence and incidence studies have increased in recent years, it is stated that the global estimated prevalence is around 13% today (Lopes et al. 2021). This percentage shows that almost one out of every seven to eight children has various problems related to MIH. According to European Academy of Paediatric Dentistry diagnostic criteria, white-creamy and/or yellow–brown demarcated opacities, post-eruptive enamel breakdown, atypical caries and restorations, and tooth loss due to MIH are some of these problems (Ghanim et al. 2015). In addition, difficulties in providing adequate anesthesia, hypersensitivity of different severity, aesthetic problems, and the decrease in quality of life due to all these make this health problem even more important (Bekes and Steffen 2021; Tugcu et al. 2022). As a matter of fact, studies on etiology and prevalence, as well as quality of life and clinical management have increased nowadays, revealing the importance of MIH in terms of community oral and dental health.

Reasons such as the decrease in adhesion to the enamel affected by MIH, developments in restorative materials, various changes in the mineral content of the lesions, and the rapidly progressive character of the lesions continue to be investigated since studies on the subject have been on the agenda for the last twenty years. In different clinical studies, approaches such as eliminating hypersensitivity, using preventive materials and techniques (such as fissure sealants), restoring caries-free teeth with post-eruptive enamel breakdown, performing prosthetic, restorative, and endodontic treatments in teeth with caries, and extraction and/or orthodontic treatment have been investigated in molar teeth affected by MIH (Lygidakis et al. 2009, 2022; Rolim et al. 2021; Somani et al. 2022).

It is known that children with developmental enamel defects experience various psychosocial effects in terms of quality of life and aesthetic satisfaction (Silva et al. 2020; Jälevik et al. 2022). Changes in aesthetic appearance, especially in the presence of visible defects, can have negative effects on social interactions and the self-esteem of children affected by MIH (Joshi et al. 2022).

In recent years, developments in remineralization agents and the rise of minimally interventional dentistry have changed the approach to dental caries and developmental enamel defects. To eliminate hypersensitivity and increase mineral density, the effectiveness of different remineralization agents in both molars and incisors affected by MIH was investigated with different study types and evaluation methods (Restrepo et al. 2016; Olgen et al. 2022; Sezer and Kargul 2022; Sezer et al. 2022). On the other hand, clinical management of anterior teeth with approaches such as resin infiltration and microabrasion has been the subject of various studies (Marouane and Manton 2021; Athayde et al. 2022). As I mentioned above, the negative effect observed in the incisors affected by MIH, especially aesthetically, reduces the quality of life of individuals (Hasmun et al. 2020). Indeed, Hasmun et al. (2018) showed that minimally invasive aesthetic approaches (resin infiltration, dental bleaching, resin composite restorations, and microabrasion) applied to these teeth have a positive effect on the well-being of children.

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The effect of dental aesthetic appearance is an undeniable reality in terms of ensuring the social maturation of children and strengthening their self-perception, especially at school age. In this context, the aesthetic rehabilitation of the incisors affected by MIH is of great importance. However, the systematic review by Somani et al. (2022), in which they presented treatment approaches for teeth affected by MIH in children and adolescents, showed that there are many treatment approaches for molars, while treatment approaches and studies for incisors are quite limited. While a few of these studies focused on improving the aesthetic appearance, others focused on eliminating hypersensitivity, and some focused on increasing the mineral content (Somani et al. 2022).

In conclusion, more research is needed on the management and impact of incisors in terms of psychosocial development and optimal oral and dental health in individuals affected by MIH as a major and important health problem. Considering the results of the recent reviews and meta-analyses, further research on issues such as providing aesthetics for incisors, increasing mineral content, and eliminating hypersensitivity in different age groups and lesion types will enable clinicians who need information on treatment management to approach patients and apply treatment accurately and based on evidence.

Sincerely,

Dr. Berkant Sezer.

Data availability statement Data sharing is not applicable to this article as no new data were created or analyzed in this paper.

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