Oral Presentations

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Assessment of Dental Caries and Molar Incisor Hypomineralization in Children with Chronic Kidney Disease

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Background/Aim: Enamel defects and dental caries in children with systemic disease are quite important for public health, since they can identify possible etiological factors, as well as identifying populations that merit priority preventive interventions. The aim of the study was to investigate the molar incisor hypomineralization and dental caries in children with different stages of CKD and kidney transplant recipients (KTR), as well as compare it with a group of healthy children.

Method: A total of seventy-one children aged between 0-18 years diagnosed with CKD or KTR and fifty-two healthy children were included in the study. Each patient was examined for dental caries by the International Caries Detection and Assessment System (ICDAS-II) criteria and molar incisor hypomineralization (MIH) by the modified DDE (mDDE) index. Fisher exact test for comparing quantitative variables between groups were used. p 0.05 was considered statistically significant.

Results: The stage 1-3 and 4-5 of CKD patients had statistically significant lower caries scores than the healthy children (p 0.05). According to ICDAS-II subgroups, there was a statistically significant difference between stage 4-5 patients and healthy children (p 0.001). Enamel defects were observed in 4 out of 5 stage 4-5 patients. The higher rate of MIH lesions observed in stage 4-5 patients (p = 0.001) and these lesions was also higher in children with KTR than healthy children (p 0.001). ICDAS-II and mDDE categories were statistically significantly different between all groups.

Conclusion: According to our study, the incidence of MIH-related lesions was found to be higher in children with advanced CKD while the risk of dental caries was found to be lower. We conclude that CKD affect enamel formation and suggest a need for further studies of the etiological factors involved in children with CKD.

Molar Incisor Hypomineralization: Restoration Using the Indirect Approach in Children

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Background: Stainless-steel crowns, resin and Glass Ionomer restorations are the treatment of choice for restoring severely damaged hypomineralized molars. These are interim restorations due to repeated marginal breakdown of the restorations. Intraoral scanners (IOS) have become an integral component of the dental tool arsenal. IOS facilitate taking impressions in children: easily, quickly and accurately. Aim: to present a serial of cases using an innovative treatment approach for children with MIH.
Method: Using IOS all the restorations were performed with glass-ceramic (IPS e.max Lithium Disilicate ®), hybrid ceramic (Cerasmart®) or Zirconia. Most of the children were treated under nitrous oxide inhalation sedation and an effective local anesthesia. All treatments were performed with rubber dam. Preparation of the teeth included removal of all areas of enamel and dentin porosity and preservation of the healthy enamel. The IOS impressions included scanning of the prepared tooth and its antagonist, scanning of the bite and CAD-CAM preparation of the restoration. Definitive restoration was cemented under rubber dam. Follow up 3 months later and on a regular basis.
Results: All the restoration were in place and successful.
Conclusion: The use of IOS has opened a new venue for restoring MIH teeth, by reducing the challenge of child's behavior and enabling tooth structure preservation and long-lasting restoration.

Can Molar Incisor Hypomineralization Cause Dental Fear and Anxiety or Influence the Oral Health-related Quality of Life in Children and Adolescents? A Systematic Review

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Purpose: Molar Incisor Hypomineralization (MIH) are first molars with developmental enamel defects and are common findings in many child populations. The porous nature of MIH enamel and the presence of post eruptive enamel breakdown leads to the presence of hypersensitivity and pain, which is often the patient's main complaint and can result in dental fear and affect the quality of life.
The present review aims to summarize the evidence for the ability of MIH to cause problems, such as dental fear and anxiety (DFA), and to summarize the evidence for a possibly negative impact on the oral health-related quality of life (OHRQoL) of MIH affected children and adolescents, in a systematic review.
Method: Two searches, 1) MIH AND dental anxiety, and 2) MIH AND Quality of life, were performed in MEDLINE/PubMed and Scopus. Selection demands were fulfilling the MIH diagnosis criteria using validated instruments and questionnaires for assessing DFA and OHRQoL, respectively.
Results: After removing duplicates and articles not fulfilling the selection demands, 6 studies concerning MIH and DFA, and 8 studies concerning MIH and OHRQoL remained.
Conclusion: Children and adolescents with diagnosed MIH did not seem to suffer from increased dental fear and anxiety but indicated an impaired oral health-related quality of life.

Hypersensitivity Relief of MIH Affected Molars Using Two Sealing Techniques

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Objectives: The aim of this study was to compare the efficacy in reducing hypersensitivity in molar incisor hypomineralization (MIH) affected molars immediately and over 12 weeks after sealing using two different materials (composite and glass ionomer). Furthermore, the retention rates of both materials were analyzed.
Methods: 39 children with two MIH affected molars showing hypersensitivity and non-occlusal breakdowns were included. Hypersensitivity was assessed with an evaporative (air) stimulus. Both teeth were sealed by two calibrated operators using a split-mouth design with either Clinpro Sealant in combination with Scotchbond Universal (C) or Ketac Universal (K), respectively. Clinical pain assessments (Schiff Score Air Sensitivity Scale [SCASS], Visual Analog Scale [VAS]) were made at baseline ("pre"), immediately after treatment ("post") and after one, four, eight and 12 weeks. Paired t-tests were calculated in each group between baseline and all other time points.
Results: 38 children with 76 molars completed all stages of the study. Regardless of the material used, the application of the sealant decreased hypersensitivity significantly immediately as well as throughout the twelve-weeks recalls (all p-values 0.001). We found no statistically significant difference among both materials chosen in any of the time points evaluated. Furthermore, retention of both materials was comparable in both groups.
Conclusions: Sealing of hypersensitive MIH-affected molars revealed a significant improvement of OHRQoL immediately and throughout the twelve-weeks follow-up.
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The Global Picture of Prevalence and Etiological Data for MIH in Hungary, Differential Diagnosis and the Planning of the Adequate Orthodontic Treatment with Two Relevant Case Presentations

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Background: The Molar-Incisor Hypomineralization Syndrome (MIH) is a developmental defect caused by enamel matrix malformation of the permanent first molars and incisors. There has been a wide variation in MIH prevalence to be reported. It seems to differ with geographical regions and various birth cohorts. Complications for clinicians include complexity in conservative treatment planning and treatment implementation, poor prognosis of the restorations.
Aim: The presentation aims to provide a global picture of the prevalence and on the most probable etiological factors of MIH in Hungary. Furthermore, it highlights the importance of early diagnosis in cases undergoing orthodontic treatment.
Design: Patients age groups of 6 to 18 years arriving at Semmelweis University, Department of Paediatric Dentistry and Orthodontics for orthodontic examination and treatment were included in the presentation. The criteria for acceptance were the presence of MIH of the first permanent molars and incisors. Following photo documentations and detailed anamnesis, special attention was given to differential diagnosis, and the conservative or extraction treatment prior to the orthodontic solution, as to the criteria of the selection of orthodontic treatment types. One relevant differential diagnosis case where MIH occurred due to the drug abuse of the mother during pregnancy and one case of a functional orthodontic treatment during the growth period is presented.
Conclusion: The MIH prevalence and etiological factors found globally in our country recorded during studies conducted by the different dental schools affiliated to medical universities scored comparatively similar data as in other European countries. The slight differences could be due to the geographical conditions and participants selection criteria. For MIH patients' early diagnosis and treatment are important also for the planning of the adequate orthodontic treatment. Therefore, the applied orthodontic or facial orthopaedic treatment methods should follow the principles of minimal invasive dentistry.