



Uri Zilberman

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Biography

Uri Zilberman, received his DMD degree in 1983 from the Dental Faculty, Hebrew University, Jerusalem, and his PhD degree in 2000 on basic dental science, especially dental anthropology. Dr. Zilberman has a specialist degree in pediatric dentistry from 1990 and treated children and adolescents for the last 45 years. Prof. Zilberman is the head of the Pediatric Dental Unit at Barzilai Medical University Center, a unit recognized for specialization in pediatric dentistry since 2007. Associated Professor at the Faculty of Health Science, Ben-Gurion University of the Negev, Beer-Sheva, and teaches a course on Pathophysiology of the Oral Cavity for fourth year pharmacology students. Prof. Zilberman published more than 90 research papers and chapters in pediatric dentistry and dental anthropology. His main interests are new dental procedures and devices for pediatric dentistry, hereditary disorders and their effect on tooth development, and the use of biomimetic materials in pediatric dentistry, like Glass-Ionomers Cements. He developed new dental procedures and a patented new dental device for pediatric dentistry.

MIH Etiology and Treatment Options

Abstract:

MIH (Molar Incisor Hypomineralization) is a growing worldwide burden. It affects almost 30% of the children aged 6–16 in Israel and is still increasing. The aetiology is obscure since the defect occurs during the first 2–3 years of life but the clinical expression can be observed after first molar eruption, age 6+. It started with dioxin poisoning of mother milk in 1996 and all the childhood diseases and oxygen shortage to genetic mutations recently. Amelogenesis: During the secretory stage of amelogenesis the ameloblasts start secreting large amounts of enamel matrix proteins. Several proteins are secreted: amelogenin (80–90% of the organic matter), ameloblastin (only 5%) and enamelin (3–5%). The enamel proteins are degraded by two proteases: matrix metalloproteinase 20 (MMP20) and kallikrein 4 (KLK4). We examined the concentration of MMP20 and KLK4 from blood samples of 500 children aged 0–6 years and compared with clinical MIH findings after eruption of the permanent molars. In children with MIH the concentration of KLK4 were significantly lower (P value=0.02). The concentration of MMP20 was higher in the MIH group but without statistical significance. In the absence of KLK4, substantial retention of enamel proteins occurs in the enamel. It may be postulated that the retention of the enamel proteins in MIH/dmh teeth was caused by reduced concentration of KLK4.