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Understanding Dental Fluorosis: Clinical insights and Genetic Perspectives

Abstract:

Dental fluorosis (DF) is a prevalent developmental defect of tooth enamel caused by exposure to excessive fluoride, with the severity dependent on various factors. Clinically, dental fluorosis manifests as varying degrees of enamel hypoplasia, which can range from mild white spots or streaks to severe staining and pitting of the enamel. Mild cases may only present with delicate white lines, while moderate to severe cases can exhibit dark brown discoloration and increased enamel fragility, which can lead to greater susceptibility to caries and other dental issues. The treatment of dental fluorosis primarily focuses on aesthetic improvement and functional preservation of the affected teeth. Approaches vary based on the severity of the condition and may include professional dental cleaning, micro abrasion, whitening procedures, and in some cases, the application of composite resin restorations. For severe cases where structural integrity is compromised, rehabilitation options such as crowns or veneers may be recommended to restore both functionality and appearance. It is about a study that investigated the association between DF and a specific genetic polymorphism (rs412777) in the COL1A2 gene among a sample of the Tunisian population. The results of allelic distribution revealed that A allele carriers were significantly protected against (DF) when compared to those with the C allele ($p = 0.001$; OR = 0.375 (0.207–0.672)). The findings suggest that genetic predisposition plays a relevant role in the development of DF. Further research is needed to explore the potential use of genetic markers for DF and their implications for public health. This conference aims to define dental fluorosis and detail its causes, clinical aspects and treatment approaches. Furthermore, it aims to present the results of a study conducted in the genetic field.

Biography

Kallala holds a master's degree in 'Health Prevention and Exploration' from the Faculty of Medicine in Monastir. In 2021, she completed a Certificate of Complementary Studies (CEC) in 'University Pedagogy' at the same institution. She has participated in various pedagogical training programs, including the 'Concepts fondamentaux de didactiques et de pédagogie' organized by the University of Monastir in April 2023 and the 'Summer School' seminar in August 2023. As a researcher, Dr. Kallala is a member of the laboratory focusing on biomechanical, aesthetic, and occlusal studies of all-ceramic restorations. She also serves as a reviewer for scientific journals and is a member of thesis committees at the Faculty of Dental Medicine in Monastir.