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Erosive tooth wear among 12-14 year old school children with fluorosis in khartoum's state endemic areas

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Introduction: The world wide increase in Tooth Surface Loss (TSL) has been the concern of many investigators. Dental erosion is defined as the physical result of a localized, chronic and pathological loss of dental hard tissue, caused by acids or Chelan's, without bacterial involvement. Another dental condition is fluorosis which is known by its direct effect on the dental hard tissue.

Objectives: To investigate Tooth Surface Loss (TSL) among 12-14 years old school children with fluorosis in endemic areas of fluorosis in Khartoum State, evaluate pattern, severity and determine relationship between TSL, fluorosis and dietary habits, correlating the prevalence, pattern and severity of dental erosion to pattern and severity of dental fluorosis.

Research Design: A cross-sectional descriptive study.

Method and Participants: a stratified random sample of 448 twelve to fourteen years old students from public schools. The presence and severity of fluorosis was recorded using Dean's index(1942) according to WHO(1997) criteria. TSL was measured on the labial/buccal, lingual/palatal and incisal/occlusal surfaces of maxillary and mandibular teeth. Surfaces scored according to criterion described by the National Survey of Child Dental Health.

Results: The prevalence of TSL was found to be 82%. Mild and Moderate TSL are the most detected among the sample, maxillary central incisors and first molars are the most affected teeth. A significant relation between TLS and fluorosis was detected in the incisal surface of maxillary incisors ($p < 0.002$) and occlusal surface of maxillary first molars ($p < 0.03$). TSL into the pulp was not detected.

Conclusion: A significant relation was found between TSL and fluorosis especially in the incisal surfaces of maxillary incisors and occlusal surface of first molars. A high prevalence of TSL (82%) among the sample suggest a relation between fluorosis and TSL, although other confounding factors like acidic food could contribute in aggravation of such condition. Mild TSL is the dominant between the sample 51% with no pulpal involvement. Regarding gender no significant difference was observed among the sample.

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