

EVALUATION OF THE INTENSITY AND PREVALENCE OF DENTAL CARIES IN PATIENTS WITH DENTAL FLUOROSIS

Elena STEPICO, Maria PATRANAC

Nicolae Testemitanu State University of Medicine and Pharmacy, Republic of Moldova

Corresponding author: Elena Stepico, e-mail: elena.stepico@usmf.md

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Introduction. Dental fluorosis is an endemic condition of hard dental tissue, caused by excessive exposure of the child's body to the action of fluoride during tooth formation and mineralization. Dental caries is a condition of the dental hard tissues, caused by the following four major risk factors: the cariogenic diet, the susceptibility of the enamel, the cariogenic microorganisms of the bacterial plaque and time. The susceptibility of the enamel to the acidic action is largely determined by various factors, such as the extent of structural and chemical changes in fluorotic enamel, eating habits, fluoride levels in drinking water and food as well as in the oral cavity, saliva amount and quality changes, as well as oral hygiene. Despite its relationship with fluoride, which is recognized as the main reason for the reduction in the prevalence and intensity of tooth decay in recent decades, the susceptibility of fluorotic enamel to caries remains ambiguous. There are regions in the Republic of Moldova where the concentration of fluoride in drinking water exceeds the normal range, amounting for 14 mg/L, especially in deep water. Epidemiological literature data indicate a high frequency of dental fluorosis in the Republic of Moldova. The frequency of fluorosis in 6-year-old children from regions with high fluoride content in drinking water makes up 62.5%, in 12-year-old children – 79.8% and in 15-year-old children – 80.5%. The prevalence rate of caries also shows high values, thus the frequency in the 6-year-old age group is 87.4% of dental caries, 77.53% for 12-year-old participants and 86.2% for 15-year-old participants, respectively. The purpose of the study was to estimate the prevalence and intensity of dental caries in children and adolescents from two age groups 12 and 15 years old, from the Republic of Moldova, diagnosed with dental fluorosis. **Material and methods.** This research is a descriptive observational study, in which the data obtained from the examination of 57 children, diagnosed with dental fluorosis during the years 2018-2021 were analyzed. The patients were divided in two age groups. The first group included children aged 12 (24 patients) and the second group – those aged 15 (33 patients). The following indices were analyzed: frequency and intensity indices of dental caries per each age group, distribution of cases according to gender, type of dental fluorosis as well as the distribution pattern of dental caries according to teeth group or tooth surface. **Results.** The distribution of patients according to the type of fluorosis was as follows: weak type was diagnosed in 28% of cases, mild types – in 72% of cases. The frequency of dental caries was higher in the 15-year-old age group found in 51.5% of cases compared to 20.8% in the 12-year-old age group, which is explained by an increased frequency index due to aging. Dental caries was found more frequently in girls, viz. 27.3% compared to boys – 15.3% within the 12-year-old age group, and in – 52% of girls and 50% of boys within 15-year-old age group, which is consistent with international data in this field. The intensity of dental caries (DMF) in the 12-year-old age group was equal to 3 and in the 15-year-old age group = 3.4. The most commonly affected teeth were the first lower molars (98% of cases), and the most commonly affected dental surfaces were the occlusal ones (100%). In all the cases, the teeth with milder type of dental fluorosis were affected. **Conclusions.** Contrary to popular belief that fluorotic teeth are immune to tooth decay, it was found that they are susceptible to acid attacks and therefore may eventually develop tooth decay. However, the carious pattern of fluorotic teeth differs from that of non-fluorotic ones. In our study, only the grooves and cracks in the occlusal surfaces of the molars were affected by tooth decay. Further studies in this area are needed to explain this phenomenon.