



Efficiency of Treatment and Prevention of Fluorosis In School-Age Children

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Abstract

Fluorosis in terms of prevalence and medical and social significance is one of the important problems in dentistry. There is a constant increase in the number of people with this pathology in the world.

Keywords: Dental fluorosis, non-carious lesions, enamel destruction

Introduction

Relevance of the problem: Studies by many scientists in our country show that the level of dental morbidity among the child population currently remains very high, and there is also a tendency for its further growth.

Dental fluorosis is a non-carious lesion that occurs when excessive intake of fluorides in the body during the period of tooth formation, characterized by the presence of chalky or colored spots and/or enamel destruction.

Fluorine compounds, widely distributed in nature, are part of all human organs. The amount of fluorine deposited in tissues directly depends on its intake into the body from various sources, primarily from drinking water. The optimal content of fluorine in drinking water is considered to be a concentration of 0.7-1.0 mg/l. At the same time, in the context of scientific and technological progress, fluorine has become one of the most common soil and water pollutants. Having a high reactivity, high concentrations of fluorine are able to penetrate the protective barriers of the human body and cause a variety of metabolic disorders.

Dental fluorosis (FD) is widespread throughout the world. According to WHO researchers, 84% of Ethiopian schoolchildren suffer from FD. In South Africa, when examining schoolchildren aged 10–15 years, fluorosis was diagnosed in 47% of students at a fluoride content in water of 0.2 mg/l, in 50% at 0.5 mg/l and in 95% of the examined children at 3.0 mg / l.

About 20% of the surveyed Jordanian children aged 12 had fluorosis of the labial surface of the maxillary incisors.

A few years ago, dental examinations of children in India showed that, with the optimal content of fluorides in drinking water, 55% of urban and 17% of rural children and adolescents aged 10–17 years had mild to moderate FZ. At a concentration of 1.2 - 9.0 mg / l, the indicators increased to 71 - 100% with a predominance of severe forms of fluorosis.

In Sri Lanka, the prevalence of FD among 14-year-old children from an endemic area was 78%, while among their peers from non-endemic areas it was only 5.4%.

In Australia, New Zealand, and Japan there are also fluorosis endemic zones. In the United States and Canada, there are several hundred fluorosis endemic foci, in which more than 6 million people live.

The prevalence of dental fluorosis among American children in 1986 - 1987. varied within 18 - 26%.

Modern dentistry has a wide range of effective methods for the treatment of FZ. However, for many patients in the Jondor district of the Bukhara region, primarily adolescents, it remains a problem. At present, when society considers a beautiful healthy smile to be the standard of success of respectable norms, this problem is becoming more and more urgent.

At the beginning of the last century, the attention of dentists was attracted by an unusual brown pigmentation of tooth enamel, which was called "mottled enamel" (Mottledenamel). Brown teeth were found only in certain areas, and it was observed that the enamel is stained only in people living in these areas during the period of tooth development. It was also noted that if young people came to the problem area with erupted teeth, then brown staining of the enamel did not appear even with a long stay. Based on these observations, the areas in which enamel mottling was common were called endemic. It was found that endemic and non-endemic areas had different sources of water supply. Therefore, it could be assumed that drinking water was the cause of the brown staining of the teeth.

Thus, mottling, or irregular spots of white or brown color on the enamel, was considered endemic in the incidence of teeth in several parts of the world. For the first time, such enamel lesions were described by the American scientists Black and McKay in 1916. Only 25 years later, in 1931, the relationship between enamel staining and the fluoride content in drinking water was also discovered by the American scientist H. Churchill. Around the same time, the American scientist H. Dean found that teeth formed in endemic areas may be mottled, but less prone to caries. It was Dean who first introduced the term “fluorosis” into medicine (Malkova I.L., Pyankova L.G., 2008; Dean H.T., 2006 (reprint); Toth K., 1990; Pendry D.G., 1999).

Currently, fluorosis is called microelementosis associated with excessive intake of fluorine compounds into the body (chronic fluorine intoxication). All organs can be affected, but first of all, hard tissues of the tooth and bone tissue (Grosser A.V., Matelo S.K., Kupets T.V., 2009; Gazhva S.I., Gadaeva M.V., 2014) . A sociological study demonstrates that fluorosis as a serious cosmetic defect is a risk factor for the formation of psychological problems in a significant part of adolescents (Davydov B.N., Belyaev V.V., Klyueva L.P., Ryabov D.V., 2009).

The above determined the purpose of the study: to identify the features of the medical and social aspects of dental fluorosis in school-age children and, on this basis, improve the methods of treatment and secondary prevention of fluorosis in order to improve their dental health.

Conclusions: Based on clinical, functional and immunological studies, for the first time a set of dental therapeutic and preventive measures was developed aimed at preventing complications of dental fluorosis in school-age children.

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