

IMMUNOGLOBULINS IgA AND IgG IN CHILDREN WITH PERMANENT DENTITION AND DENTAL CARIES

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ABSTRACT

The antibacterial and antiviral activity of saliva is mainly mediated by IgA, IgG and, to a lesser extent, IgM immunoglobulins. Given that saliva is in constant contact with all tissues in the oral cavity and that it contains components with a protective role, maintaining the health of the oral mucosa and other oral tissues, implies the constant presence of these elements in physiological conditions. Salivary immunoglobulins are necessary for the preservation of all oral tissues and organs because they have a huge antimicrobial effect. Saliva immunoglobulins are synthesized locally in the plasma of enamel interstitial cells. Several species have been shown in the final saliva secretion, the most important of which are IgA, IgG and IgM. The aim of this research was the relationship between the values of immunoglobulin A and immunoglobulin G in the saliva of children with permanent dentition and the presence of dental caries.

The study included 71 children (26 female and 45 male) with permanent dentition of both sexes at the age of 12 years. We performed the dental examinations using portable lamps with a power of 60 W with a white-blue spectrum and sterilized periodontal probes No. 5 and a mirror. We took the saliva samples in the morning at least one hour after the last meal and brushing the teeth, with the absence of the subjects who are in the process of preparing for dental treatment. The evaluation of IgA and IgG in saliva was done with ready-made factory tests Synergy™ Microplate Readers and HTRF® Detection from BioTek Instruments, Inc., headquartered in Winooski, USA. The principle of the immunoturbidimetric methodology for the determination of IgA IgG is based on the fact that proteins in saliva form immune complexes in an immunochemical reaction with specific common anti-IgG and IgA antibodies. These complexes blur the sample at a maximum brightness of 334 nm - 340 nm. The intensity of blurring is proportional to the concentration of immunoglobulins in the sample. The result is evaluated through a standard curve.

Examined relationship between the values of immunoglobulin A in the saliva of children with permanent dentition and the presence of dental caries shows that for $R = -0.65$ ($p < 0.05$) a strong negative significant correlation was found. Namely, the increase in the values of immunoglobulin A in the saliva of children with permanent dentition is accompanied by a decrease in the presence of dental caries in children. The examined relationship between the values of immunoglobulin G in the saliva of children with permanent dentition and the presence of dental caries shows that for $R = -0.57$ ($p < 0.05$) a strong negative significant correlation was found. Namely, the increase in the values of immunoglobulin G in the saliva of children with permanent dentition is accompanied by a decrease in the presence of dental caries in children. Data analysis was performed in statistical programs Statistica 7.1 for Windows and SPSS Statistics 17.0. The Descriptive Statistics method was applied.

The examined relationship between the values of immunoglobulin A and immunoglobulin G in the saliva of children with permanent dentition and the presence of dental caries has a negative strong significant correlation ($p < 0.05$) determined also with the increase in the values of immunoglobulin A in the saliva of children with permanent dentition has been accompanied by a decrease in the presence of dental caries in children.

Key words: IgA, IgG, Dental caries, Permanent dentition.

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