Original scientific paper
UDC 616.314-002:616.316-008.8-097

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

Sanja Nashkova[1*], Cena Dimova[1], Katerina Zlatanovska[1], Sonja Rogoleva Gjurovski[1]

[1]Faculty of Medical Science, University "Goce Delcev", Krste Misirkov 10-A, 2000 Stip, Macedonia

[*]e-mail: sanja.naskova@ugd.edu.mk

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 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 were 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, 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. The Descriptive Statistics method was applied. Data analysis was performed in statistical programs Statistica 7.1 for Windows and SPSS Statistics 17.0.

The 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.

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.*