Inflammation and clinical immunology

The analysis of immunoglobulin A, M, G blood levels and the correlation with the concentration of light and heavy metals in the blood serum in adolescents.

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Introduction: The natural exposure to various environmental pollutants, including metals, is known to induce epithelial and inflammatory changes. A release of cytokines and other mediators, including immunoglobulines is then observed as a reaction of the organism.

Objective: The present study describes the effect of the exposure to zinc, magnesium, cadmium and lead on the production and the concentration of A, M, G immunoglobulins i a group of adolescents.

Material and Methods: 35 children, (17 female and 18 male, mean age: 10,56) who were admitted to allergist due to allergy diagnostics. The concentration of immunoglobulines in serum, as well as the concentration of zinc, magnesium, cadmium and lead were measured. The data was statistically analysed.

Results: The values of concentration of immunoglobulines were stadtardized. The outcome is shown as a percentage of maximum value for one's sex and age. The values for IgA were 15%-146% with low negative correlation to cadmium(-0,20)IgM concentration was 33%-235% of maximum physiological values with the stron negative correlation with cadmium (-0,49). The igG was between 37% to 152% with low negative correlation with cadmium (-0,29).

Conclusions:

The obtained values did not correlate between themselves very strong. Cadmium ws the only root that showed a stronger link between its concentration in serum and the concentration of immunoglobulines.