

Title: EARLY IMMUNE STATE VIOLATIONS IN CHILDREN ASSOCIATED WITH LOW CONCENTRATIONS OF N-NITROZAMINES IN BLOOD

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ABSTRACT: The concentration of N-nitrosamines (N-nitrosodimethylamine and N-nitrosodiethylamine) was measured in blood samples from children after consumption of drinking water with high content of nitrates (main group) and water meeting health standards (reference group). N-nitrosodimethylamine level in the blood from children of the main group differed from that in the reference group by 2.6 times (0.00026±0.00012 and 0.0001±0.00092 mg/dm^3, respectively; $p<0.05$). The specific immune response to N-nitrosodimethylamine exposure was manifested in an increase in the level of specific serum IgG (2 times higher than that in the reference group). An increase in the specific sensitivity to N-nitrosodimethylamine (by the criterion of IgG) was observed in 60.7% subjects. A correlation was found between an increase in the level of IgG to N-nitrosodimethylamine and rise in the concentration of N-nitrosodimethylamine in the blood (R^2 =0.35; p=0.021). Under these conditions the spontaneous and induced production of arachidonic acid metabolites (leukotrienes) increased by 2.1 times, while the expression of p53 transcription factor (responsible for oncosuppression) decreased by 1.9 times as compared to those in the reference group ($p<0.05$).