PECULIARITIES OF IMMUNE STATUS IN CHILDREN WITH NEWLY DIAGNOSED TUBERCULOSIS

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Abstract

Despite a large prevalence of Mycobacterium tuberculosis infection (TB), the disease occurs in a small proportion of people. An immune system plays important protective role. Children are the most vulnerable part of the population due to certain anatomic and physiologic peculiarities of their organism.

Aim: to examine functional condition of cells, responsible for nonspecific and specific immune defense in children of different age.

Material and methods. There were examined 44 patients aged 5 to 16 years with newly diagnosed tuberculosis (NDTB). The control group consisted of 44 healthy BCG vaccinated children 5 to 16 years of age, notinfected with MBT. In all children we studied the relative and absolute content of peripheral blood granulocytes and monocytes, phagocytosis activity, spontaneous production of reactive oxygen forms, phagocytic number. Specific reactivity was examined using in vitro tests with phytohemaglutynin (FGA) and the BCG induced lymphocyte blast transformation reaction.

Results and discussion. Lymphocyte proliferative response to BCG in children aged 5-9 years with a local TB was significantly (2.4 fold) higher than in healthy children. In children aged 10-16 years proliferative response to a specific stimuli was less intensive than in the younger group, but significantly higher than in the control group (1.9 times in comparison to normal results on PHA in all children). In children of 5-9 years age group with local NDTB we observed an inhibition of the functional state of granulocytes and monocytes with a decrease of phagocytic number. Average relative content of granulocytes in children in 10-16 years age group was 1.2 times less than in the control group. Phagocytic number of granulocytes in children with NDTB aged 10-16 years was 1.2 times lower than in healthy children. Other parameters studied in patients with NDTB from older age group did not differ from those in healthy children. Reported functional changes in cells of specific and nonspecific immune defense are considered as their dysfunction and require effective immune correction.

Key words: tuberculosis in children, specific and nonspecific immune defense.

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