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ALTERED EXPRESSION OF T LYMPHOCYTE SURFACE MARKERS IN CHILDREN WITH CHRONIC AUTOIMMUNE THYROIDITIS

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Introduction: CTLA-4 and CD28 surface molecules are among the main regulators of T cell activation. The CTLA-4 gene was found to be associated with a variety of autoimmune diseases, like type I diabetes mellitus, autoimmune thyroid diseases and with bronchial asthma. The aim of the study was to evaluate the changes in basic T cell subpopulations: CD4+ and CD8+, and the expression of CD152+ and CD28+ on T cells before and after in vitro stimulation of T cell from children with chronic autoimmune thyroiditis in comparison with healthy controls. **Material and methods.** The blood samples were obtained from 35 children with chronic autoimmune thyroiditis (AT) and from 25 healthy children age and sex matched, free from allergic, immune and hematological disorders and with normal thyroid gland function. The diagnosis of chronic autoimmune thyroiditis (Hashimoto's thyroiditis) was based on the presence of anti -thyroid antibodies and characteristic picture of thyroid gland in ultrasonographic examination. Commercially conjugated antibodies to fluorescein isothiocyanate (FITC) and phycoerythrin (PE) dyes (immunocytometry system, Coulter) were used, including isotype control. CD4, CD8, CD28, CD152 markers were evaluated at the baseline, after 48 hours culture with phytohaemagglutinine (PHA) or without stimulation. **Results:** At the baseline, expression of CD152 was significantly lower in AT patients than in the control group ($p<0.0000002$). No difference in the expression of other examined markers was found. PHA stimulation significantly increased the number of CD152+ T cells ($p<0.01$) and decreased CD28+ ($p<0.001$) and also CD4+ T cells ($p<0.01$) in healthy subjects. In AT children, after PHA stimulation, the number of CD152+, CD4+ and CD8+ T cells remained stable, CD28+ T cells decreased compared to non-stimulated culture. The number of CD4+CD152+ T cells correlated inversely with the antithyroglobuline antibodies level ($r=-0,34$, $p<0.05$). **Conclusions:** The alterations in leukocyte surface markers are associated with AT. Lymphocyte activation in both examined populations leads to differing changes in the proportion of T-lymphocyte subsets. Defective CTLA-4 expression on activated T cells may promote the activation of co-stimulatory T cell signaling pathways leading to autoimmune

diseases including AT. This effect may be primary or result from abnormal immune regulation.