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COMPARISON BETWEEN THE SURFACE AND INTRACELLULAR EXPRESSION OF THE CTLA-4 IN T CELLS IN CHILDREN WITH HASHIMOTO'S THYROIDIDIS

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The dysfunction of the CTLA-4 (CD152) causes a severe limphoproliferative syndrome in knock-out mice. CD152 is the basic negative regulatory molecule of T cell activation. Its regulatory function mainly depends on the surface CD152 expression on T cells. The aim of the study was to evaluate the intracellular and surface expression of CTLA-4 on peripheral T cells at the baseline and after in vitro T cell activation in children with autoimmune thyroiditis in comparison to healthy controls. Material: blood samples were obtained from 46 children: 25 with Hashimoto's thyroiditis and 21controls without any autoimmune disease or thyroid disorders. Hashimoto's thyroiditis (HT) was diagnosed according to the presence of high levels of anti- thyroid antibodies and typical picture of thyroid ultrasound. Methods: The T cell phenotype was evaluated using the flow cytometer Beckman Coulter EPICS XL 4C (EPICS XL/XL-MCL, version 2.0) with monoclonal antibodies combination: CD4- FITC/ CD28 -PC5/ CD152 -PE and CD8 -FITC/ CD28 -PC5/ CD152 -PE obtained from Immunotech Beckman Coulter Company, France. T cell phenotype was evaluated at the baseline and after 48- hours T cell culture with phytohaemagglutinine as the T cell activator (48 PHA). Statistical analysis was performed using T-test and Mann -Whitney U-test. Results: The number of T cells with intracellular CD152 expression was similar in HT patients and controls at the baseline and increased after 48PHA: from 2.16±1.51% to 6.51± 3.13% in HT versus 2.67±1.4% to 6.34±3.08% in controls. The number of T cells with the surface expression of CD152 at the baseline and after 48PHA was significantly lower in HT patients than in controls in both basic subsets CD4+ T cell and CD8+ T cell ($p<0.0001$ and $p<0.0004$, respectively). Conclusion: Our results suggest that in autoimmune thyroiditis the impaired function of CTLA-4 might be dependent on imbalance of intra/surface expression of the CD152 in T cells.