P1-T2

The authors have nothing to disclose

Assessment of ZnT8 antigen in thyroid cells in children and adolescents with Hashimoto thyroiditis and nodular goitre.

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Introduction:

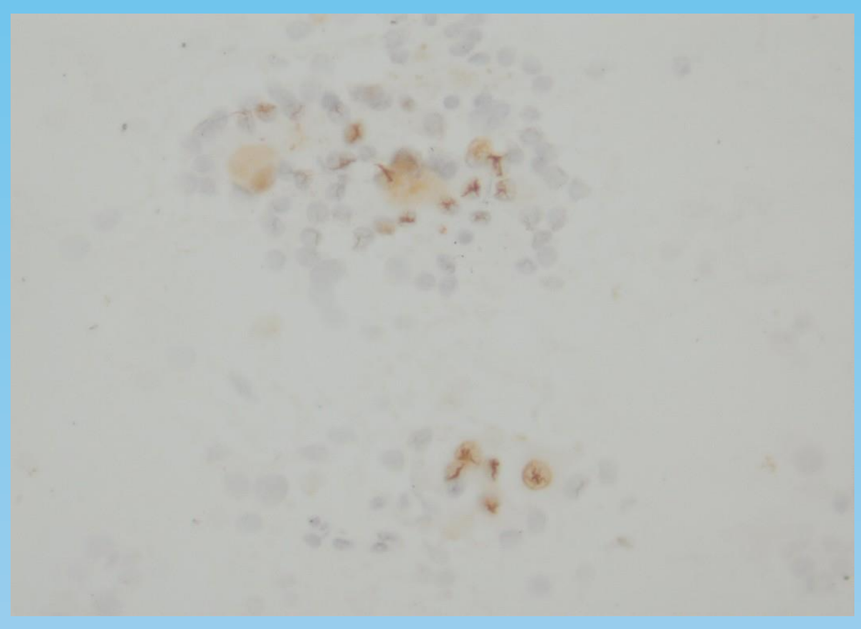
The presence of ZnT8 (zinc transporter 8) has been described on the surface of beta pancreatic cells in type 1 diabetic patients and the ZnT8 Ab (zinc transporter-8 autoantibody) has been recently established as a new marker of this autoimmune disease. There are studies demonstrating that ZnT8 may be of importance in some other endocrine cell types. In our study we wanted to verify the presence of ZnT8 in thyroid cells of children and adolescents with autoimmune thyroid diseases (AITDs) and nodular goitre to investigate the potential contribution to the pathophysiology of the diseases.

Matetials and methods

The study was performed in the group of 29 children and adolescents (6 boys and 23 girls) (44 nodules): 24 Hashimoto thyroiditis patients (mean age 14.9±3.0 years) and 21 nodular goitre with lymphocytic thyroiditis patients (mean age 14.1±3.3 years). Patients were recruited from the Paediatric Endocrinology Outpatient Clinic, Medical University of Białystok. ZnT8 antigen on the surface of thyroid cells obtained during fine needle aspiration biopsy was detected immunohistochemical method with monoclonal mouse origin antibody ZnT-8 (B-9): sc-514715 Santa Cruz Biotechnology. The immunohistochemical reaction was assesed with light microscope. The result was presented in a following scale: light colour (+) – weak reaction, light brown colour (++) – mild reaction, dark brown colour (+++) – strong reaction.

Results:

The presence of ZnT8 antigen was detected in follicular thyroid cells and oxyphilic cells. Follicular cells in Hashimoto's thyroiditis revealed weak reactions with antibodies (+) in 60%, mild reactions (++) in 30%, and strong reactions (+++) in 10% while oxyphilic cells revealed mild reactions (++) in 55%, strong reactions (+++) in 30%, and weak reactions (+) in 15%. In nodular goitre follicular cells revealed in most cases strong reaction (+++).



ZnT8 antibodies in the thyroid cells.

Conclusions:

In conclusion, these results suggest that in case of an intensive infiltration with lymphocytes (Hashimoto thyroiditis) the oxyphilic cells reveal higher expression of ZnT8 (stronger reaction) than follicular cells. On the other hand ZnT8 is highly expressed in follicular cells in the nodular goitre.