AUTOIMMUNE THYROIDITIS: THE INFLUENCE OF ENVIRONMENTAL FACTORS Kononenko A. National University of Pharmacy Kharkiv, Ukraine alevtina19820103@gmal.com

Introduction. Autoimmune thyroiditis is a chronic organ-specific disease of the thyroid gland, the pathogenetic pathways of its occurrence and development have been studied very actively in recent years, which has led to important scientific and practical results that have given rise to the search for more advanced methods of diagnosis and treatment of this fairly common endocrine pathology.

Autoimmune thyroiditis is a genetically determined disease that occurs as a result of adverse environmental factors, which has been convincingly proven by long-term observations of thousands of mono- and dizygotic twins in many countries.

The aim of the study. Determining the influence of environmental factors on the prevalence of autoimmune thyroiditis among the population.

Materials and methods. The paper uses literature data on the impact of external factors affecting the incidence and prevalence of autoimmune thyroiditis, including among age and social groups.

Results and discussion. The prevalence of autoimmune thyroiditis among the adult population of different countries ranges from 2 to 4%. It occurs 10-15 times more often in women than in men. Children suffer from autoimmune thyroiditis somewhat less often than adults (prevalence -1%), girls three times more often than boys.

Among the external factors that determine the development of the autoimmune process in the thyroid gland in autoimmune thyroiditis, a significant role is played by excess iodine. It is known that in regions with high iodine intake, the incidence of autoimmune thyroiditis is significantly higher (e.g., in Japan); in countries where iodine deficiency was actively combated, the incidence of autoimmune thyroiditis increased (e.g., in Greece).

In experiments, excessive iodine intake in animals dramatically increased the activity of apoptosis in thyroid cells, especially in the presence of goiter. This is due to the fact that such animals have a high metabolic activity of thyrocytes, and excess iodine is rapidly oxidised by thyroid peroxidase to form a large number of intermediate products (iodine hydrochloride, free oxygen radicals), which, as chemically active substances, oxidise lipids and proteins of thyrocyte membranes, accompanied by the release of thyroid antigens. The oxidative effect of iodine is especially activated in case of selenium deficiency, which is a component of natural antioxidants of the glutathione peroxidase family. In addition, highly iodinated thyroglobulin accelerates the transition of monocytes into dendritic cells, the accumulation of which in the thyroid gland may indicate the onset of an autoimmune process, and in individuals prone to autoimmune diseases is the first stage of autoimmune thyroiditis.

Radiation exposure is of great importance in stimulating autoimmune processes in the thyroid gland. It is able to increase the production of such an active cytokine as tumour necrosis factor- α , which is one of the factors that triggers apoptosis in thyrocytes.

Recently, the role of viruses in the etiology and pathogenesis of autoimmune thyroiditis has been actively studied. The possibility of autoimmune thyroiditis under the influence of viruses in animals has been demonstrated, but all attempts to detect viruses, retroviruses or other viral antigens in people with autoimmune thyroiditis have so far been unsuccessful.

In people prone to autoimmune diseases, the development of autoimmune thyroiditis during or after treatment with Cordarone, which contains 75 mg of iodine per 1 tablet (200 mg), cannot be ruled out. Also noteworthy are observations indicating a significantly higher incidence of autoimmune thyroiditis in patients with type 2 diabetes mellitus (i.e., not autoimmune etiology) treated with sulfonylurea derivatives. This also confirms the role of environmental factors in the manifestations of autoimmune thyroiditis.

Harmful industries and poor ecology in the region of residence also contribute to the development of autoimmune thyroiditis. The study revealed a direct correlation of medium strength between the impact of air emissions from stationary and mobile sources and the prevalence of autoimmune thyroiditis among adults and children.

Factors that contribute to an increased risk of developing autoimmune thyroiditis also include chronic diseases of the upper respiratory tract, chronic caries, severe stress, hormonal imbalance (causing an unstable emotional background), prolonged exposure to adverse effects of direct sunlight, independent attempts to boost immunity and uncontrolled use of immunomodulatory drugs, thyroid diseases of a tumour nature (for example, endemic goiter), Hashimoto's syndrome can occur in the setting of certain blood diseases.

Conclusions. The analysis of the literature showed that the prevalence of autoimmune thyroiditis is facilitated by the adverse effects of environmental factors.

Key words: autoimmune thyroiditis, iodine excess, environmental factors, radiation.