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Morphological and Morphometric Characteristics of the Thyroid Gland Polypharmacy Anti-inflammatory Sensors

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ABSTRACT
Pathology of the thyroid gland registers markeromological problems. the most detected morphophysiological structural tumor of the gland is tissue microdistrict uniting a group of follicles and interfollicular space with autonomous system of blood and lymph circulation. Features of the structure of the tissue microdistrict we observe most of all under the action of pathogenic factors on the protective gland, role in frequent morphological and metabolic changes in tissues and organs [Borodin Yu.I., et al., 2018]. But morphological and morphometric changes
of the thyroid gland in polypharmacy with anti-inflammatory drugs are poorly understood. The article presents a review of the literature on structural changes in the thyroid gland in polypharmacy with anti-inflammatory drugs.

Introduction

Considerable attention is paid to the morphology of the thyroid gland due to growth of endocrine pathology worldwide. Thyroid pathology ranks second place after diabetes mellitus [O. V. Gorchakova., 2019]. Pathology of the thyroid gland considered a marker of environmental distress. most significant morphophysiological structure of the thyroid gland is a tissue microregion, uniting a group of follicles and interfollicular space with an autonomous system
blood and lymph circulation It is the structures of the tissue microdistrict that suffer the most under the action of pathogenic factors on the thyroid gland, reducing its role in providing morphological and metabolic changes in tissues and organs [Borodin Yu.I., et al., 2018]. The thyroid parenchyma itself is formed by a system of thyrocytes, among which There are two main varieties - follicular and interfollicular cells. The former form follicles with the ability for extracellular accumulation of hormonal active substan The latter are involved in the proliferation of the thyroid parenchyma, forming interfollicular islets between follicles. Morphogenetic potencies stromal-parenchymal relationships are determined by the ratio of follicular epithelial tissue, colloid and interstitium.

Currently, worldwide interest in studying the mechanisms of damage and structural reorganization of the organs of the endocrine system caused by various pathological agents -

physical, chemical, medicinal factors [Anvarova Sh.S., Niyazova N.F., Juraeva S.D., Inoyatova N.A. , 2017].

The importance of the thyroid gland (TG) for the life of the body is difficult to overestimate [Starkova I., 2012]. In addition to thyrocytes, the main cell population that makes up follicular compartment of the gland, it contains the second largest cell group - calcitoninocytes (parafollicular or C-cells) [Solyannikova D.R., Bryukhin G.V., 2009]. They are of neurogenic origin and belong to the so-called APUD-system [Smirnova T.S., 2009], which is scattered in various organs and cell populations producing various biologically active substances, which are considered as a diffuse neuroendocrine system [Sazonov V.F., 2014].

Parafollicular cells in small groups are located in the interstitium of the thyroid gland and / or lie on the basement membrane between thyrocytes (intraepithelial), but never border with the lumen of the follicle. Their maximum number is concentrated in the central departments of each lobe of the thyroid gland, which is called the "C-cell region".

parafollicular cells make up no more than 1% of the thyroid epithelium. They are 2-3 times larger than thyrocytes, polyganal or slightly elongated, have larger and lighter nuclei with 1-2 dense nucleoli and pale cytoplasm containing small argyrophilic granules [Volkov V. P., 2014].

The term "polypharmacy" (from poly - a lot and pragma - an object, a thing) means the simultaneous and often unreasonable prescription of many drugs or medical procedures [E.A. Panova,et al., 2019].

Polypharmacy is nothing but pharmaceutical pressure on patient as a result of an irrational integrated approach. In outpatient and inpatient settings, patients are most often prescribed more two drugs (MP). Moreover, the doctor does not always know what is really the patient takes and in what doses, discompliance often occurs. Polypharmacotherapy can occur not only because of the large number of concomitant diseases and conditions in the patient, but also due to the wrong choice of drugs, when the patient takes unidirectional, mutually exclusive or optional medications.

It has insufficiency or perversion of the effect of the prescribed drug, due to changes in metabolic processes in the elderly. This often leads to incorrect correction of treatment tactics in the direction of increasing the number of drugs or replacing them with stronger ones. The results of polypharmacy are a decrease/absence effect of treatment, unwanted side effects, frequent hospitalizations, large monetary costs for both the patient and the healthcare system as a whole.

Scientific the medical community offers evidence-based methods to combat polypharmacy in the form of various analytical algorithms for pharmacotherapy prescriptions. This is the index of rationality drugs (Medication Appropriateness Index, USA, 1992), Beers criteria (American Geriatric Association, 2003, 2012), STOPP/START criteria (UK National Health Service Guidelines, 2013, 2015), FORTA (Germany, 2011), PINCER criteria (UK, 2012) [Guthrie B., Yu N., Murphy D., 2015]. Unfortunately, at present, the frequency and consequences of irrational polypharmacy in outpatient clinics in our country are not enough studied [E.A. Panova, 2019].

Widespread, destructive effect on many body systems, leading to a very noticeable deterioration in the quality of life of patients, put diseases thyroid gland is on a par with pathologies such as diabetes and diseases of cardio-vascular system. According to the World Health Organization (WHO) among endocrine disorders, thyroid diseases rank second after diabetes mellitus. According to statistics, thyroid disorders suffer up to a third of the world's population. More than

740 million people in the world have endemic goiter or suffer from another thyroid pathology; 1.5 billion people face development risk iodine deficiency diseases. At the same time, according to statistics, the increase in the number of diseases thyroid gland in the world is 5% per year [N.Yu. Kryuchkova, et al., 2018].

In recent decades, the functional state of the thyroid gland in patients of various profiles. It is known that thyroid hormones regulate the state of all organs and systems in the human body, primarily the processes of growth, maturation and cell differentiation [A.R. Volkova, 2018].

Thyroid disease is one of the most common types of endocrine pathology, which is due to many factors, among which the most important are iodine deficiency, increased radiation background, unfavorable environmental environment and psycho-emotional stress. Acute and chronic stress can disrupt secretion of thyroid hormones and significantly change the morphology of the gland, causing this change is different in severity and direction [S.N. Styazhkina, 2015].

The drug effect on the immune system often leads to the development of such adverse events such as autoimmune diseases. However, from all organs endocrine system most often affects the thyroid gland, organ, features whose embryonic development is predisposed to both spontaneous and induced lesions with various autoimmune influences [G.A. Melnichenko, 2016].

Currently, worldwide interest in studying the mechanisms of damage and structural reorganization of the organs of the endocrine system caused by various pathological agents - physical, chemical, medicinal factors [Sh.S. Anvarova, et al., 2017].

The term "polypharmacy" is often used in the medical literature, however there is no generally accepted definition. In domestic literary sources polypharmacy is defined as the simultaneous administration of a large number of drugs, in including their unjustified use. In foreign literature, the term is used "polypharmacy" (polypharmacy, from the Greek poly- and pharmacy - medicine). In other literary sources there is a qualitative definition of polypharmacy - the appointment of a patient more drugs than required by the clinical situation and quantification - prescribing 5 or more drugs to a patient [D.A. Sychev, V.A. Otdelenov, N.M. Krasnova, 2016].

The reason for the simultaneous prescription of several drugs may be the presence of comorbidities (multimorbidity), drug availability, and clinical recommendations, guidelines from professional medical societies, treatment standards, containing in some cases recommendations on the use of complex therapy for more than 5 drugs for only one indication, the effectiveness of which corresponds to high levels of evidence. An analysis of the literature shows that today the fight against polypharmacy with anti-inflammatory drugs is one of the important tasks

care for patients of all ages. This highlights the need developing strategies that improve the quality of care and reduce side effects reactions to drugs [Shekunova E.V., Kovaleva M.A. wa b. 2020 Yil Annuar Fazalda, Adam Quraisiah, Mohd Fahami Nur Azlina. 2018, Arthur J. Kast L, Natalie A. Terry, Gaary D. Albenberg, 2019].

From the literature review above, it is clear that research into polypharmacy and its influence on the endocrine system, especially the thyroid gland, is not enough. Among available data, there are some inconsistencies that require further morphological and morphometric studies.

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