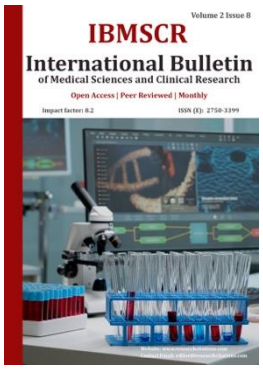

EPIDEMIOLOGY OF VASOMOTOR RHINITIS (NONALLERGIC RHINITIS) IN PATIENTS WITH THYROTOXICOSIS

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https://doi.org/10.5281/zenodo.15343289

During recent years, clinicians have investigated extensively the causative factors in vasomotor rhinitis, more particularly the seasonal vasomotor rhinitis or so-called hay-fever. There is, however, a group of cases in which this type of symptoms continues throughout the year, without a definite seasonal activity. With thyroid dysfunction, a number of significant deviations from the physiological norm are observed on the part of the ENT organs, which indicates the influence of thyroid hormones on the functional state of the upper respiratory tract. The purpose of this review is to study the effect of thyrotoxicosis on the course of vasomotor rhinitis. The review material included scientific publications over the past 10 years, published in the international databases E-library, Scopus and Web of Science. Thus, it follows that the study of the features of the clinical course and treatment of vasomotor rhinitis associated with thyrotoxicosis is of particular importance.

Keywords: vasomotor rhinitis, thyrotoxicosis, influence, incidence, diagnostics.

Nonallergic rhinitis (NAR) describes a syndrome of chronic symptoms of nasal congestion and rhinorrhea, unrelated to a specific allergen. Nonallergic rhinitis can subdivide into numerous different subtypes with vasomotor rhinitis (VMR) being the most common type. Vasomotor rhinitis is a term often used to describe rhinitis symptoms associated with nonallergic, noninfectious triggers with no clear etiology after the conclusion of an exhaustive search for a diagnosis. The pathophysiology of nonallergic rhinitis is complex, with still much to be discovered. It is partly due to an imbalance between parasympathetic and sympathetic inputs on the nasal mucosa. The most critical factor in attaining a proper diagnosis of vasomotor rhinitis is a comprehensive history and physical. The best overall treatment is the avoidance of the known trigger with medical therapy as an adjunct. When all other options fail, surgical intervention becomes a viable therapy.

Although the etiology of vasomotor rhinitis is not well understood, it is thought to be associated with the dysregulation of sympathetic, parasympathetic, and nociceptive nerves innervating the nasal mucosa. The imbalance among mediators results in increased vascular permeability and mucus secretion from the submucosal nasal glands. Mucous secretion is regulated primarily by the parasympathetic nervous system, whereas the sympathetic nervous system controls vascular tone. Acetylcholine is the primary parasympathetic neurotransmitter that regulates mucus secretion and rhinorrhea. Norepinephrine and neuropeptide Y are sympathetic neurotransmitters that control the vascular tone of vessels in the nasal mucosa and modulate the parasympathetic system-initiated secretions. Sensory neuropeptides and nociceptive type C fibers of the trigeminal nerve contribute to mast cell degranulation as well as the itching/sneezing reflexes.

Rhinitis, whether allergic or nonallergic, affects roughly 20% of the population in industrialized countries. An estimated 20 to 40 million people are affected by allergic rhinitis,

costing over $1.9 billion annually. An estimated 17 to 19 million Americans experience nonallergic rhinitis. Nonallergic rhinitis presents later in life, with patients developing symptoms most commonly between the ages of 30 and 60. Females are more affected by nonallergic rhinitis than men. 70% of women aged 50 to 64 experience some form of nonallergic rhinitis in any given year.

The relationship of otolaryngology with other clinical disciplines is traced, mainly, in the aspect of the influence of diseases of the upper respiratory tract on the state of internal organs. The problem of the influence of various diseases of the organism on the occurrence, course and features of the treatment of chronic inflammatory processes of the upper respiratory tract has been extremely insufficiently studied. In the domestic literature, this issue has been paid attention to by individual representatives of otolaryngological science.

Clinical observations based on a very limited number of patients and published mainly in small-circulation publications in the form of abstracts indicate that functional disorders of the thyroid gland have a certain effect on the clinical picture, treatment and prognosis of many diseases, including ENT organs, bronchial asthma, atopic dermatitis, allergic diathesis, etc. In turn, some pathological conditions of the body, including chronic tonsillitis, allergies of the upper respiratory tract and other organs and systems, contribute to the disruption of physiological functions and the deepening of existing autoimmune changes in the thyroid gland.

With dysfunction of the thyroid gland, a number of significant deviations from the physiological norm are observed on the part of the ENT organs, which indicates the influence of thyroid hormones on the functional state of the upper respiratory tract.

With combined pathology, a synthesis of pathological reactions occurs with the appearance of new disorders of the body that do not fit into the framework of the classical signs of a particular disease and cause the emergence of certain difficulties in the diagnostic and therapeutic processes.

Publications covering the issues of the relationship of upper respiratory tract diseases with thyroid pathology mainly discuss the features of symptoms, the objective picture of the nasal cavity, pharynx and ears and the nature of functional disorders of the nasal mucosa. At the same time, we have not found any works covering the issues of the features of the treatment of AR associated with thyroid dysfunction in the available literature.

In thyropathies, chronic inflammation of the palatine and pharyngeal tonsils is diagnosed in 51-64.8% of patients. Typical complaints of patients with thyroid dysfunction are dryness and a lump in the throat, difficulty swallowing. Such changes can mask the manifestations of chronic tonsillitis, which, against the background of hypothyroidism, tend to be latent. Patients with chronic decompensated tonsillitis often have dysfunction of the thyroid gland. This is due to the anatomical proximity of the palatine tonsils and thyroid gland, common blood supply, innervation and lymph drainage. It is believed that the degree of disruption of the hormonal spectrum of the thyroid gland depends on the form of decompensation of chronic tonsillitis (recurrent tonsillitis, chronic tonsillogenic intoxication, diseases of internal organs associated with chronic tonsillitis), the duration of chronic tonsillitis, the severity of histomorphological changes in the tissues of the palatine tonsils.

According to data, one of the early symptoms of hypothyroidism can be a change in voice. Thickening of the vocal folds was found in 25% of patients with hypothyroidism and

swelling in 4.5%. A number of authors believe that weakness, fatigue and voice changes in hypothyroidism are a consequence of mucoid infiltration and swelling of the vocal folds.

Studies by individual authors have established that the main clinical form of voice disorders in thyroid pathology is hypotonic dysphonia. Having examined several thousand patients with endemic goiter and hypothyroidism, the researchers came to the conclusion that the earliest symptom of hypothyroidism is cochleovestibular disorders. Labyrinth disorders in patients with hypothyroidism were explained by hydrops of the labyrinth and suggested prescribing thyroid hormones as treatment measures.

The issue of the influence of thyroid dysfunction on allergic diseases has not been sufficiently studied, and many authors cite individual clinical observations without systematizing them and explaining the relationship.

A frequent combination of hypothyroidism and chronic urticaria was observed, and urticaria is also recognized as a typical manifestation of thyrotoxicosis, which is observed in more than 10% of patients.

A comparative assessment of the effectiveness of antiallergic and thyroid therapies for a combination of hypothyroidism with recurrent urticaria and skin itching showed that treatment with antihistamines had little effect on skin symptoms, and hormone replacement therapy led to a noticeable improvement in the patient's condition. Many authors describe clinical observations of patients with worsening of bronchial asthma after the addition of hyperthyroidism, write about the first-time occurrence of bronchial asthma against the background of thyrotoxicosis. According to the literature, in moderate and severe forms of bronchial asthma, thyroid dysfunction occurs 2-4 times more often. Many authors note the prevalence of hyperfunction of the thyroid gland in the initial and mild forms of bronchial asthma and hypofunction in moderate and severe forms. The presence of a close relationship between bronchial asthma and thyroid pathology is also evidenced by a number of data, according to which an exacerbation of bronchial asthma is often accompanied by clinical symptoms of thyroid dysfunction and changes in hormone levels (T3).

Research in recent decades has revealed the presence of thyroid dysfunction in more than half of patients with bronchial asthma, which has cast doubt on the opinion about the random combination of these conditions.

Describes signs of functional disorders of the thyroid gland in children with atopic dermatitis.

Research has shown that children with different manifestations of dermatitis in combination with thyroid dysfunction had deeper immune disorders that were more difficult to treat, and clinical remission of the process occurred later than in children with unchanged thyroid function. Signs of thyroid dysfunction were found in approximately the same number of children with atopic dermatitis and their mothers, and a high frequency of occurrence of the same HbA antigens and their combinations in children and women with thyroid dysfunction was also revealed, which allowed the author to talk about the genetic predisposition of children with atopic dermatitis to functional disorders of the thyroid gland.

It is believed that the basis of functional changes in the thyroid gland in atopic dermatitis are immunological disorders of the body.

The older generation of otolaryngologists believed that with various types of thyroidopathy, such changes as redness, swelling, pallor, and dryness are detected on the part of the mucous membrane of the nasal cavity. According to the group of authors,

hypothyroidism is more often diagnosed in patients with vasomotor rhinitis. Based on the conducted studies, it is concluded that hypothyroidism can lead to the development of vasomotor rhinitis. It also does not exclude the simultaneous development of thyroid dysfunction and vasomotor rhinitis due to changes in the functional state of the nervous system.

Some in 25% of patients with "allergic rhinopathy" observed goiter of I-II degree of enlargement, which was accompanied by thyrotoxicosis.

Other authors deny the etiological role of hormonal dysfunction in the development of allergic diseases of the respiratory tract, however, recognize the pathogenetic role of hormonal factors in allergic processes and recommend, like other authors, to use small doses of thyroidin for vasomotor rhinitis.

Summarizing the literature data presented above, it can be concluded that information on the relationship between upper respiratory tract diseases and thyroid dysfunction is scarce and contradictory. The issues of treating combined thyroid pathology and vasomotor rhinitis remain poorly understood.

In this regard, it follows that the study of the clinical course and treatment of vasomotor rhinitis associated with thyrotoxicosis is of particular importance.

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