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IMMUNE MECHANISMS OF IMPLEMENTATION OF ALLERGIC RHINITIS AND THE WAYS OF IT CORRECTION

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Introduction: Allergic rhinitis is a global health problem worldwide. The basis of the pathogenesis of the allergic form of the disease is a type I hypersensitivity reaction. It has been established that in AD (allergic disease) there is a restructuring of the immune system to a Th2 response, which leads to excessive activation of B-lymphocytes, an increase in the synthesis and secretion of IL-4 and IL-5, the development of IgE-dependent reactions, as well as a decrease in the production of IL-2. Despite certain successes achieved in the field of pathophysiology of AR (allergic rhinitis), a number of questions remain regarding the importance of immune mechanisms in the realization of different phenotypes of AR.

Materials and Methods: We conducted an analysis of the scientific literature regarding the possibility of using immunomodulatory drugs to restore the balance between the states of the immune system of T helpers 1st and T helpers 2nd cytokines in patients with histamine-mediated allergic reactions.

Review: We consider the body to be in a "balanced" immune state when there is a constant movement between T helpers 1st and T helpers 2nd immune conditions over a 24-hour period. These two states of the immune system suppress each other and are in a parity: the body spends twelve (12) hours in a T helper 1st condition (antiviral, antibacterial, antiparasitic activity) and then twelve (12) hours in a T helper 2nd condition (proinflammatory activity). Causes like an anxiety and chemical influence weaken our body's capacity to protect itself, not by transmitting the cellular immune reaction (T helper 1st-the body's skill to identify and eradicate unfamiliar agents), but by chronically increasing humoral immunity (T helper 2nd), a pro-inflammatory condition that usually prevails in situation of local injury curing or histamine-mediated allergic reaction. In case when the chronic elevation of the humoral immune response continues, known as a "T helper 1st to T helper 2nd switching". With a switch from T helper 1st to T helper 2nd, the cytokine profile changes from antiviral, antibacterial, antiparasitic (T helper 1st) to inflammatory-reparative (T helper 2nd), but does not turn back to the T helper 1st state within 12 hours. This chronically elevated pro-inflammatory immune response called as a T helper 2nd immune condition. Current medical researching established that mushroom dietary (using the mushroom Coriolus versicolor) is able to balance T helper 1st and T helper 2nd immune conditions, thereby conversing the "T helper 1st to T helper 2nd condition". From the point of view of nutritional immunomodulation, it has been observed that dieting and alimentation can influence the role of different immune criterions. This approach can be used in efforts to avoid or reduce allergic reactions through the prescribing of certain food supplement or agents. In this sense, there are foods and ingredients that show potential, with a particular focus on pro- and prebiotics, i.e. β-glucans and fungal immunomodulatory proteins.

Conclusions: An analysis of the scientific literature on the study of the possibility of the effect of plant substances as an immunomodulatory drug demonstrated that Ganoderma lucidum is a valid remedy for restoring the balance between the immune conditions of T helper 1st and T helper 2nd cytokines in patients with histamine-mediated allergic reactions. We believe that this information about the mechanisms of action of Ganoderma lucidum in the form of the drug Asthmagan is sufficiently convincing for its possible use in the treatment of allergic rhinitis.

Keywords: allergic rhinitis, type I hypersensitivity reaction, cytokine T helper 1st, cytokine T helper 2nd, Ganoderma lucidum.

CLINICAL SIGNIFICANCE OF HIGH-FREQUENCY AUDIOMETRY IN THE DIAGNOSIS OF TINNITUS

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Introduction: Tinnitus is the subjective perception of sound in the absence of an external objective sound source. 10% to 15% of the population suffers from chronic tinnitus. Patients with complaints of noise characterize it in different ways: ringing in the ears, buzzing, whistling, the sound of a broken TV, « etc. In some cases, tinnitus can be severely affect various social areas of a person's life and accompanied by depression and anxiety disorders. Various questionnaires are used to assess the impact of tinnitus on quality of life.

Hearing loss is known to be the most common cause of noise. And there is an established relationship between the tonality of noise and the frequency range of hearing loss. The measuring pure tone average (PTA) of hearing thresholds is performed in the traditional range from 125 Hz to 8000Hz. However, such traditional audiometry is not always enough informative and reliable. The expediency of using high frequency (HF) audiometry remains controversial, although many studies show that monitoring of extended high frequencies is useful in diagnosing of hearing loss in certain populations treated with ototoxic drugs. Therefore, recently the measurement of auditory thresholds above 8000 Hz is used more often, which is facilitated by the development of clinical audiometers with these parameters. All of the above initiated our interest in this study.

In this study, we aimed to investigate the clinical relevance of high-frequency audiometry results in an extended range up to 20,000 Hz in the diagnosis of patients with tinnitus.