

Commentary on the Practice of Medicine (12): Awakening Beauty

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AN INNOCENT COMMENT

Once, back in February 2018, I casually mentioned the link between leaky gut syndrome and thyroid diseases while discussing a specific nutritional formula designed to enhance thyroid function. This happened on my personal Facebook account where I believed I was engaged in a conversation with "friends". In reality, my comment was more of an observation than a definitive statement. I simply shared that, based on my clinical experience, there did appear to be a clear connection between increased intestinal permeability and autoimmune thyroid diseases. Although I did not present this as a formal declaration or a professional endorsement, it was enough to prompt some medical professionals to accuse me of breaching Article 14 of the Brazilian Code of Medical Ethics. Allegedly, I did something deemed unnecessary or prohibited. Their argument revolved around the absence of both the formula and the leaky gut connection in a consensus document about hypothyroidism published by the Latin American Thyroid Society [1]. I initially attempted to explain that I'm not an endocrinologist but, rather, a clinical nutrition practitioner. My approach typically focuses on enhancing thyroid function through the use of nutrients instead of hormonal treatments.

THE THYROID-GUT AXIS

Let's search into the topic of leaky gut syndrome, a disorder in which the intestinal lining becomes inflamed, damaged, and overly porous. To begin with, it's important to note that the consensus mentioned above was dated back to June 2013. To provide some context, I conducted a search on PubMed specifically for articles related to leaky gut syndrome, filtering the results from the year 1980 through 2023. The search yielded a total of 814 references, distributed as follows: 142 articles in 2023, 158 articles in 2022, 130 articles in 2021, 98 articles in 2020, and a gradual decrease in numbers as we move further back in time, with 13 articles in 2013, 14 articles in 2012, 11 articles in 2011, and a combined total of 49 results from the period spanning from 1980 to 2010. This data highlights a significant trend: the majority of articles and research on leaky gut have been published in the last three to four years, that is, we have witnessed a surge in research and interest surrounding this condition. In 2013, when the consensus was published, leaky

gut syndrome was not as extensively addressed in the scientific literature as it is today. However, in 2012, an insightful review study titled "Leaky Gut and Autoimmune Diseases" shed light on the critical role of impaired intestinal barrier function in the development of autoimmune diseases [2]. The article explained that, in conjunction with the gut-associated lymphoid tissue and the neuroendocrine network, the intestinal epithelial barrier with its intercellular tight junctions is essential to maintain the delicate balance between tolerance and immune responses to non-self-antigens [2]. Notably, the article pointed out that, at the time, zonulin stood as the sole known physiological regulator of intercellular tight junctions, involved in the control of macromolecule trafficking [2]. In other words, when the zonulin pathway is deregulated in genetically susceptible individuals, it can pave the way for the onset of autoimmune disorders [2]. The emerging paradigm challenged the conventional theories that previously underpinned our understanding of autoimmune disease development [2]. It proposed that these processes could potentially be halted by preventing the interplay between genetic factors and environmental triggers through the restoration of zonulin-dependent intestinal barrier function [2]. In conclusion, damaged intestinal barrier and the following increase of intestinal permeability, allowing antigens to pass more easily and activate the immune system or cross-react with extra-intestinal tissues, is considered to be involved in autoimmune conditions, including both Hashimoto's Thyroiditis and Grave's Disease [3-5].

NUTRIENTS AND AUTO-IMMUNE THYROID DISEASES

The composition of the gut microbiota influences the

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availability of essential micronutrients crucial for proper thyroid function [3]. Key elements such as iodine, iron, and copper are essential for thyroid hormone synthesis, while selenium and zinc are required for the conversion of T4 to T3 [3]. Vitamin D assists in regulating the immune response [3]. Those micronutrients are often found to be deficient in auto-immune thyroid diseases, contributing to thyroid dysfunction [3]. A comprehensive 2020 review study titled "The Importance of Nutritional Factors and Dietary Management in Hashimoto's Thyroiditis" provides a precise exploration of the impact of nutrients and gut flora on this autoimmune thyroid condition [6]. It reinforces the notion that while genetic factors are primary from an etiological standpoint, various environmental factors, such as stress, smoking, toxin exposure, alcohol consumption, microbiota dysbiosis, infections, medications, and nutritional imbalances, are triggers for the immune system to initiate the attack in autoimmune thyroid diseases [6,7]. Observational and controlled trials have consistently highlighted common nutritional deficiencies in Hashimoto's patients, including selenium, potassium, iodine, copper, magnesium, zinc, iron, and vitamins A, C,D, and B [6]. The dietary therapy for Hashimoto's focuses on nourishing the body properly and regulating the immune system through an anti-inflammatory diet [6]. The importance of maintaining an appropriate protein intake, dietary fiber, and unsaturated fatty acids, particularly those from the omega-3 family, is underscored [6]. Additionally, Hashimoto's patients are often advised to eliminate lactose due to intolerance issues and to avoid gluten because of potential interactions between gliadin and thyroid antigens [6].

GENES AND THYROID: A NEW FUTURE

Hashimoto's Thyroiditis has been associated with several genetic loci, including HLA-DR, immuno-regulatory genes such as CD40, FoxP3, CD25, CTLA-4, and PTPN22, as well as thyroid-specific genes like thyrotropin (TSH) receptors and thyroglobulin [7-9]. Moreover, Hashimoto's Thyroiditis often co-occurs with other autoimmune diseases, such as hair loss, leukoplakia, celiac disease, and type 1 insulin-dependent diabetes [8]. Grave's Disease is also a complex condition driven by a multifactorial interplay of genetic and non-genetic factors that disrupt immune tolerance to thyroid antigens, triggering a sustained autoimmune response [9]. Twin and family studies support a role of genetic factors, including the HLA complex, CD40, CTLA-4, PTPN22, FCRL3, thyroglobulin, and TSH receptor [9]. Considering the evolving landscape of genetic knowledge, nutrigenomics panels offer the opportunity to identify genes linked to thyroid diseases and intervene proactively to maintain health. The concept of "the science of health maintenance", which prioritizes health promotion and disease prevention over symptom management and illness treatment, is increasingly becoming a reality. This aligns with the principles of 5P Medicine in the 21st Century, which emphasizes a more Preventive, Predictive, Personalized, Pro-

active, and Pluri-expert approach to healthcare [10,11].

PROVISIONAL SYNTHESIS

In dialectics, synthesis emerges as a result of the logical convergence - often referred to as dialectical logic - between the thesis and its antithesis. This synthesis, however, doesn't assume the role of a conclusive endpoint but, actually, serves as a new thesis that remains subject to potential refutation, perpetuating the dialectical process. In the field of Medicine, it's clear that our knowledge is in a constant state of evolution. This implies that it's virtually impossible to always have the right answers or make perfect decisions at all times. This reality extends to various professions, from cooks to builders to teachers, and beyond. Importantly, this acknowledgment doesn't compromise one's integrity and commitment. In my case, I genuinely strive to assist my patients in finding their unique path to cure, a proposition that holds more certainty than merely relying on medications to enhance their health. I firmly reject any accusations of unethical conduct as a medical doctor, asserting my dedication and care towards my patients' well-being.

THE BEAUTY IN EVERYTHING

The following text was taken from a book authored by Gregg Braden, an internationally recognized researcher, considered the first one to bridge the gap between science, ancient wisdom and the real world: "Some of the oldest and most sacred traditions remind us that beauty is in all things, regardless of how we interpret them in our daily lives. Beauty is already created and is always present. Although we can change our surroundings, create new relationships, and move to new places to satisfy our ever-shifting ideas of balance and harmony, the foundations that support this beauty are already present. In addition to the enjoyment of things that simply please our eyes, wisdom traditions describe beauty as an experience that also touches our heart, our mind and our soul. With our ability to perceive beauty even in the "ugliest" moments of life, we can rise high enough to give new meaning to our suffering. Thus, beauty is a triggering mechanism that launches us into a new perspective. The key, however, is that it seems dormant until the moment we pay attention to it. Beauty only awakens when we invite it into our lives" [12]. In essence, the underlying purpose of writing these articles was to imbue new meaning into personal struggles, to uncover beauty even where it seemed absent. I never previously faced public accusations of ethical misconduct, making this a particularly hard and challenging experience to me. However, this adversity presented an opportunity to write and discover more about myself, especially in the context of my work. It involved finding its beauty. In that way, I feel I have freed myself from the negative feelings that bothered me for a while and I finish this series of Commentaries on the Practice of Medicine. With love and glory.

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