

Thyroid Cancer: Current Advances in Diagnosis, Treatment and Prognosis

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Introduction

The thyroid gland is regulated by the hypothalamic-pituitary- axis, a complex neuroendocrine system that controls thyroid hormone production. In hyperthyroidism, there is dysregulation of the HPT axis, leading to excess thyroid hormone production. Additionally, hyperthyroidism can impact other neuroendocrine systems, including the hypothalamic-pituitary-adrenal (HPA) axis and the sympathetic nervous system, which can contribute to the symptoms observed in hyperthyroid patients. The gut microbiota plays a crucial role in regulating the HPT axis and other neuroendocrine systems. Dysbiosis, or imbalance, of the gut microbiota has been observed in patients with hyperthyroidism and may contribute to disease pathogenesis. Probiotic microbial strains, which are live microorganisms that confer health benefits to the host when administered in adequate amounts, have emerged as a potential adjunctive therapy for hyperthyroidism. Probiotics have been shown to modulate gut microbiota composition and function, improve gut barrier function, and reduce systemic inflammation, all of which may benefit patients with hyperthyroidism [1].

Description

As expected, thyroxine administration significantly elevates serum T4 and T3 levels, leading to suppressed TSH and TRH levels due to negative feedback on the HPT axis. Hyperthyroid mice exhibit increased corticosterone levels, indicating heightened stress response. Behavioral assessments reveal increased anxiety-like behaviors, cognitive impairments, and hyperactivity, consistent with CNS effects of hyperthyroidism. This study demonstrates that probiotic microbial strains can positively impact neuro-hormonal dynamics in a murine model of hyperthyroidism. By modulating the HPT axis, reducing stress response, and normalizing neurotransmitter levels, probiotics offer a promising adjunct therapy for managing the complex neuro-hormonal effects of hyperthyroidism. Further research is warranted to translate these findings into clinical practice, potentially improving the quality of life for patients with hyperthyroidism [2].

Conclusion

Hyperthyroidism is a complex endocrine disorder characterized by dysregulation of the HPT axis and other neuroendocrine systems. Probiotic microbial strains have emerged as a potential adjunctive therapy for hyperthyroidism due to their ability to modulate gut microbiota composition and function. Studies in murine models have shown promising results, but further research is needed to determine the optimal probiotic strains, dosages, and treatment durations for hyperthyroid patients. Additionally, clinical trials are

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needed to confirm the efficacy and safety of probiotic therapy in humans with hyperthyroidism.

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