

with immunoassay used to measure fT3 and fT4 but not TSH or thyrotoxicosis induced by the nutritional supplement with limitation in the technique that tried to identify fT3 in the powder. Given the presentation of the patient, we are convinced that this case represents a thyrotoxicosis induced by a nutritional supplement.

In conclusion, Graves' disease is responsible for 60–80% of the cases of hyperthyroidism. However, there are few cases reports of thyrotoxicosis induced by nutritional supplement^{1,2} but some studies demonstrate the presence of thyroid hormone in significant amounts in some commercially available health supplements³. This case highlights the importance of verifying exposition to medications and natural products when confronted to cases of thyrotoxicosis.

1. Regina A et al. MMWR Morb Mortal Wkly Rep. 2016

2. Panikkath R et al. Am J Ther. 2014

3. Kang GY et al. Thyroid. 2013

Thyroid

THYROID NEOPLASIA AND CANCER

Physician Management of Thyroid Cancer Patients' Worry: Is It "Good" Enough?

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Introduction: Despite the excellent prognosis of most thyroid cancer patients, cancer-related worry is common. Additionally, patients report that being told by physicians that they have a "good cancer" invalidates their fears of having cancer and creates mixed and confusing emotions. However, it is not known what proportion of physicians try to reassure patients with the description "good cancer".

Methods: Patients diagnosed with differentiated thyroid cancer in 2014–2015 from the Surveillance, Epidemiology and End Results Program (SEER) registries of Georgia and Los Angeles County were asked to identify endocrinologists and surgeons involved in managing their thyroid cancer. Physicians were surveyed using the modified Diliman method. They were asked to describe their thyroid cancer patients' worry at time of diagnosis and what they tell them if worried. A multivariable logistic regression was conducted to identify physician characteristics associated with reporting thyroid cancer as a "good cancer".

Results: Response rate was 69% (448/654). Overall, 40% were endocrinologists, 30% were general surgeons and 30% were otolaryngologists. A total of 8% of physicians reported that their patients are not worried or are a little worried at diagnosis, 27% that they are somewhat worried and 65% that they are quite or very worried. Ninety-one percent of physicians reported providing details on prognosis including information on death and recurrence to worried patients, 61% tell them their physicians are experienced in managing thyroid cancer, and 50% tell them that thyroid cancer is a "good cancer". Factors associated with report of telling patients they have a "good cancer"

included otolaryngology specialty [odds ratio (OR) 1.84, 95% confidence interval (CI) 1.07–3.17, compared to endocrinology), private practice setting (OR 2.57, 95% CI 1.42–4.75, compared to academic setting) and Los Angeles site (OR 2.23, 95% CI 1.46–3.45, compared to Georgia site). Physicians who perceived that their patients were quite or very worried at time of diagnosis were less likely to use this terminology (OR 0.55, 95% CI 0.35–0.84) and more likely to encourage patients to seek help outside of the physician-patient relationship (OR 1.82, 95% CI 0.35–0.84), compared to patients not to somewhat worried.

Conclusion: Most physicians in our sample from two diverse geographic areas report perceiving patient worry as common at time of thyroid cancer diagnosis. They report addressing this worry with different strategies, including telling patients they have a "good cancer". The benefit of such strategies on patient outcomes still needs further investigation.

Neuroendocrinology and Pituitary

ADVANCES IN NEUROENDOCRINOLOGY

GABA Receptor-Dependent Inhibition and Excitation of GnRH Neuron Dendrons near the Median Eminence in Mice

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The gonadotrophin-releasing hormone (GnRH) neuron cell bodies are scattered throughout the basal forebrain but funnel their projections to the median eminence to control fertility in all mammals. In mice, these long projections, termed "dendrons", have characteristics of both dendrites and axons and are found to receive large numbers of synaptic inputs just prior to entering the median eminence. While the effects of many neurotransmitters have been documented at the GnRH neuron cell body, very little is known about the neural control of the distal dendron.

To examine the role of amino acid neurotransmitters in the regulation of the thin GnRH neuron distal dendrons, we used confocal microscopy in combination with real-time GCaMP6 calcium imaging in acute horizontal brain slices. Adult male and female GnRH-Cre mice were given stereotaxic injections of a Cre-dependent AAV expressing GCaMP6s and, > 3 weeks later, the brain removed and a single thick horizontal brain slice prepared that included the base of the brain and median eminence. The intracellular calcium levels of multiple dendrons were monitored simultaneously while puffs of amino acid receptor agonists were applied. Surprisingly, GABA exhibited a dual action on calcium concentrations with an initial transient increase followed by a prolonged decrease and subsequent rebound. The administration of GABA_A and GABA_B receptor agonist and antagonists revealed that the transient increase resulted from a quickly desensitizing activation of GABA_A receptors while the decrease and subsequent rebound was dependent upon the slower kinetics of the GABA_B receptor. Kisspeptin exerts a potent long-lasting elevation of calcium levels in GnRH dendrons and this was robustly inhibited by subsequent GABA_B receptor activation. In contrast to