CLINICAL THYROIDOLOGY **FOR PATIENTS**

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HYPERTHYROIDISM

TSH secreting tumors can be cured by long term octreotide treatment

BACKGROUND

TSH levels are usually the opposite of the thyroid hormone levels. In the vast majority of patients with hyperthyroidism, TSH levels are suppressed in the presence of high T_4 and T_3 levels. A normal TSH in the presence of clearly elevated levels of T_4 and T_3 is most unusual and suggests either thyroid hormone resistance or a pituitary tumor secreting TSH (TSHoma), both very rare disorders. The usual treatment for TSHomas is surgery to remove the pituitary tumor, often followed by radiation, which affects the function of the rest of the pituitary. The authors present the case of a young man with a TSHoma who was treated medically with the drug octreotide with resultant tumor shrinkage and return to normal thyroid function which persisted even after the medication was discontinued.

THE FULL ARTICLE TITLE

Fliers E, et al. Cure of a thyrotropin (TSH)-secreting pituitary adenoma by medical therapy. Clin Endocrinol. April 6, 2012) [Epub ahead of print]. Doi:10,1111/j. 1365-2265.2012.04405.x

SUMMARY OF THE STUDY

A 19 year-old male patient was documented to have a TSHoma measuring more than 1 cm is size causing overt hyperthyroidism. The tumor produced no other pituitary hormones. Treatment with octreotide for 4 months resulted in normalization of TSH levels and marked decrease in the size of the tumor on MRI scanning. The patient was maintained on octreotide treatment for 4 years, when MRI images indicated the disappearance of the tumor. Treatment was stopped at that time and the patient continued to have normal pituitary function, normal levels of thyroid hormone and no evidence of the pituitary tumor as documented by repeat MRI scanning during the next 4 years.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

Octreotide and other similar agents have been used in patients with TSHomas as first-line treatment to achieve control of hyperthyroidism prior to pituitary surgery. The present case report provides evidence that long term treatment with octreotide may result in a cure of the pituitary tumor without the need for surgical intervention.

— Frank Crantz, MD

ATA THYROID BROCHURE LINKS

Hyperthyroidism: http://www.thyroid.org/what-is-hyperthyroidism

ABBREVIATIONS AND DEFINITIONS

TSHoma: TSH-secreting pituitary tumor. This often presents as hyperthyroidism.

Hyperthyroidism: a condition where the thyroid gland is overactive and produces too much thyroid hormone. Hyperthyroidism may be treated with antithyroid meds (Methimazole, Propylthiouracil), radioactive iodine or surgery.

Pituitary gland: this endocrine gland sits at the base of the brain and secretes hormones that control thyroid and adrenal function, growth and reproduction. The pituitary gland secretes TSH to control thyroid function.

TSH: thyroid stimulating hormone — produced by the pituitary gland that regulates thyroid function; also the best screening test to determine if the thyroid is functioning normally.

Thyroxine (T_4): the major hormone produced by the thyroid gland. T_4 gets converted to the active hormone T_3 in various tissues in the body.

Triiodothyronine (T_3): the active thyroid hormone, usually produced from thyroxine.

Octreotide: a drug that usually works to inhibit other hormones. It is taken as a daily injection into the skin.

Thyroid hormone resistance: a rare genetic disorder where the thyroid hormone receptors do not respond to thyroid hormone. T_4, T_3 and TSH levels are usually high while the patient is usually hypothyroid