Clinical THYROIDOLOGY FOR PATIENTS

AMERICAN THYROID ASSOCIATION
FOUNDED 1923

VOLUME 5 • ISSUE 9 • 2012

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Clinical Thyroidology for Patients

CLINICAL THYROIDOLOGY **FOR PATIENTS**

A publication of the American Thyroid Association

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EDITOR'S COMMENTS

Welcome to Clinical Thyroidology for Patients, bringing to you, the patients, the most up-to-date, cutting edge thyroid research. What you read here as research studies will likely become the accepted practice in the future. *Clinical Thyroidology for Patients* is published on a monthly basis and includes summaries of research studies that were discussed in a recent issue of *Clinical Thyroidology*, a publication of the American Thyroid Association for physicians. This means that you, the patients, are getting the latest information on thyroid research and treatment almost as soon as your physicians.

The Calendar of Events highlights educational forums and support groups that are organized around the country by members of the Alliance for Thyroid Patient Education. The Alliance member groups consist of: the *American Thyroid Association*, the *Graves' Disease and Thyroid Foundation*, the *Light of Life Foundation* and *ThyCa: Thyroid Cancer Survivors Association*.

Follow us on Twitter at @thyroidfriends. Get the most up-to-date thyroid news fast and easy! Be the most informed thyroid patient in the waiting room. Please feel free to submit questions as well as suggestions as to how we can better serve thyroid patients.

Check us out on Facebook: www.facebook.com/thyroidassociation.

In this issue, the studies ask the following questions:

- Is there an easier and quicker way to diagnose thyroid storm?
- Can a new test actually predict remission in Graves' disease?
- Can patients with pituitary disease be hypothyroid with normal thyroid blood tests?
- Are there alternatives to surgery to TSH-secreting pituitary tumors?
- Can surgery in family members with medullary thyroid cancer be safely delayed until calcitonin levels rise?
- Does thyroid cancer staging in younger patients need to be re-evaluated?

We welcome your feedback and suggestions. Let us know what you want to see in this publication. I hope you find these summaries interesting and informative.

Have a happy and healthy rest of the summer!

— Alan P. Farwell, MD

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HYPERTHYROIDISM

Updating the diagnostic criteria of thyroid storm

BACKGROUND

Hyperthyroidism is a condition where the thyroid gland is overactive and produces too much thyroid hormone. Symptoms may include weight loss, nervousness, irritability, increased sweating, a racing heart, hand tremors, anxiety, difficulty sleeping, increased bowel movements, fine brittle hair and muscular weakness—especially in the upper arms and thighs. The most extreme form of hyperthyroidism is termed thyroid storm. This is a medical emergency and may be fatal. Fortunately, thyroid storm is rare. The key to survival in thyroid storm is early diagnosis and early treatment. The difficulty in diagnosis is that thyroid storm is a clinical diagnosis – there is no diagnostic lab test and the increased levels of the thyroid hormones T_4 and T_3 are not significantly different from those seen in routine hyperthyroidism. This study was performed to assess and develop diagnostic criteria for thyroid storm to enable the rapid identification and treatment of patients and to decrease the risk of death.

THE FULL ARTICLE TITLE

Akamizu T et al. Diagnostic criteria and clinico-epidemiological features of thyroid storm based on a nationwide survey. Thyroid. April 11, 2012 [Epub ahead of print]. doi: 10.1089/thy.2011-0334.

SUMMARY OF THE STUDY

This study surveyed all Japanese university hospitals for all cases of thyroid storm seen from 2004-2008. A total of 541 possible cases of thyroid storm were analyzed and 356 patients met the criteria for the diagnosis. They also studied 133 patients with hyperthyroidism but not thyroid storm. As noted above, thyroid storm is a clinical diagnosis. The cardinal feature of thyroid storm involves the Central Nervous System (CNS) with restlessness, delirium, psychosis, seizures and a change of mental status. If CNS features were present, the presence of only 1 of the following conditions made the diagnosis: fever >100.4F, increased heart rate >130, severe congestive heart failure or a gastrointestinal issue (diarrhea, nausea/vomiting). If patient did not have CNS features then they had to have 3 of the above conditions.

As seen previously, levels of thyroid hormones did not differ between patients with hyperthyroidism and those with thyroid storm. A total of 38 patients died of thyroid storm, a mortality rates of ~10%. The most common cause of death was multiple organ failure. Common triggers for thyroid storm were: 1. Irregular use of thyroid medicine or stopping thyroid medication, 2. Infection, 3. Diabetic ketoacidosis, 4. Emotional stress and 5. Trauma.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

This study updated the diagnostic criteria for thyroid storm and showed that patients with CNS features only need 1 additional feature to make the diagnosis. This hopefully will assist in making the diagnosis quicker and allow earlier treatment to be started. Given the high mortality rate of thyroid storm, using updated diagnostic criteria can hopefully help identify thyroid storm patients earlier and prevent complications.

— Heather Hofflich, DO

ATA THYROID BROCHURE LINKS

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

Thyroid Function Tests: http://www.thyroid.org/blood-test-for-thyroid

ABBREVIATIONS & DEFINITIONS

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.

Thyroxine (T_4): the major hormone secreted by the thyroid gland. Thyroxine is broken down to produce Triiodothyronine which causes most of the effects of the thyroid.

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

Thyroid storm: thyroid storm, also referred to as thyrotoxic crisis, is an acute, life-threatening, hypermetabolic state induced by excessive release of thyroid hormone in individuals with thyrotoxicosis.

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HYPERTHYROIDISM

New test may help predict which patients with Graves' disease will remain in remission after stopping antithyroid drugs

BACKGROUND

Patients with Graves' disease, an autoimmune disorder, develop hyperthyroidism because their immune system makes antibodies that turn on the thyroid gland, causing the thyroid to enlarge and make excessive amounts of thyroid hormones. The antibodies turn on the thyroid by acting like TSH and binding to the TSH receptor. Sometimes the antibody goes away and Graves' disease goes into remission. Indeed, that is the goal when patients stay on antithyroid drugs, such as Methimazole or Propylthiouracil, for 12-18 months and then the drugs usually are stopped. Unfortunately, a large percentage of patients either do not go into remission or relapse with in the 1st year after stopping the antithyroid drugs. Therefore, any test that would predict which patients would remain in remission and which would relapse before stopping the antithyroid drugs would be useful. The authors developed a test that measured one type of thyroid-stimulating antibodies (the Mc4 assay) which was shown to be positive in the patients with Graves' disease, but negative in patients without thyroid problems, patients with hyperthyroidisms from other causes and patients with Graves' disease that are in remission. In this study, they tested the ability of the Mc4 assay to serve as a sensitive index of remission or relapse of Graves' disease after treatment with antithyroid drugs.

THE FULL ARTICLE TITLE

Giuliani C et al. A TSHR-LH/CGR chimera that measures functional thyroid-stimulating autoantibodies (TSAb) can predict remission or recurrence in Graves' patients undergoing antithyroid drug (ATD) treatment. J Clin Endocrinol Metab. April 6 2012 [Epub ahead of print]. doi: 10.1210/jc.2011-2897.

SUMMARY OF THE STUDY

A total of 55 patients with Graves' disease who received antithyroid drugs for 12-48 months were followed for 12-120 months after the antithyroid drugs were stopped. Of the 28 patients who stayed in remission, 22 (78%) had normal Mc4 levels, while 10 of 12 (83%) patients who relapsed had elevated levels, as did all 15 patients who could not get off antithyroid drug therapy because they had evidence of persistent hyperthyroidism.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

This is an important study that identifies a test with potential to identify remission of Graves' disease in patients on antithyroid drugs as well as possibly identify those at high risk for relapse. However, a larger prospective study of patients with Graves' disease needs to be performed to determine if similar results are obtained in larger populations.

— Glenn Braunstein, MD

ATA THYROID BROCHURE LINKS

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

Graves' Disease: http://www.thyroid.org/what-is-graves-disease

ABBREVIATIONS & DEFINITIONS

Autoimmune disorders: a diverse group of disorders that are caused by antibodies that get confused and attack the body's own tissues. The disorder depends on what tissue the antibodies attack. Graves' disease and Hashimoto's thyroiditis are examples of autoimmune thyroid disease. Other Autoimmune disorders include: type 1 diabetes mellitus, Addison's disease (adrenal insufficiency), vitiligo (loss of pigment of some areas of the skin), systemic lupus erythematosus, pernicious anemia (B12 deficiency), celiac disease, inflammatory bowel disease, myasthenia gravis, multiple sclerosis and rheumatoid arthritis.

Graves' disease: the most common cause of hyperthyroidism in the United States. It is caused by antibodies that attack the thyroid and turn it on.

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HYPERTHYROIDISM, continued

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.

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.

TSH receptor: a molecule (protein) located on the thyroid cell surface that binds TSH and stimulates the production of the thyroid hormones within the thyroid cell.

Antithyroid drugs: medications that blocks the thyroid from making thyroid hormone and used as treatement for hyperthyroidism. The two drugs used in the United States are Methimazole and Propylthiouracil (PTU).

Antibodies: proteins that are produced by the body's immune cells that attack and destroy bacteria and viruses that cause infections. Occasionally the antibodies get confused and attack the body's own tissues, causing autoimmune disease.

Immune system: a system of organs, tissues, and cells in our body that has the role to recognize potentially harmful foreign substances and organisms as well as abnormal body cells and produce antibodies to destroy these factors.

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HYPOTHYROIDISM

Hypothyroidism in patients with pituitary disease may be present even when the standard tests are normal

BACKGROUND

The pituitary gland produces hormones that regulate other endocrine glands, including the thyroid and adrenal glands. Patients who have pituitary tumors or damage to the pituitary from other causes may have hypothyroidism due to a loss of TSH secretion. In general, when the usual thyroid tests (T_4 and TSH) are in the normal range, it is assumed that thyroid function is normal and no thyroid hormone treatment is needed. However, this may not be true with impaired pituitary function. It is known that heart muscle function tests using echocardiography are typically abnormal in patients with the usual forms of hypothyroidism. The authors of this study used echocardiography to examine heart function in patients with pituitary disease who have T_4 and TSH levels in the normal range and who would normally not be considered for thyroid hormone treatment. The results were compared to studies done on patients with established hypothyroidism.

THE FULL ARTICLE TITLE

Doin FC et al Diagnosis of subclinical central hypothyroidism in patients with hypothalamic-pituitary disease by Doppler echocardiography. Eur J Endocrinol 2012;166:631-640.

SUMMARY OF THE STUDY

Heart function was studied by echocardiography in 20 patients with known hypothyroidism, 28 patients with no thyroid disease and 35 patients with pituitary disease with normal TSH levels. Of the patients with pituitary disease, 10 had low T_4 levels while the rest had normal T_4 levels. As expected, the echocardiography studies were abnormal in patients with hypothyroidism as compared to those with normal thyroid function. Echocardiography was also abnormal in the patients with pituitary disease and low T_4. Interestingly, echocardiography was also abnormal in 14 of the remaining 25 patients who had normal T_4 and TSH levels. All patients with abnormal echocardiographic studies were treated with thyroid hormone and the Free T_4 levels were increased to a high level within the normal range. This therapy returned the echocardiography studies to normal in the majority of these patients.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

This study suggests that some patients with pituitary disease and normal T_4 levels can be categorized as having mild central hypothyroidism. Further, these patients may have mild heart abnormalities which can be corrected with thyroid hormone therapy. It is unclear how to identify these patients and further studies need to be done to determine who will benefit from thyroid hormone therapy. Also, it is important that a complete investigation of all of the pituitary hormones be performed on all patients in whom thyroid hormone therapy is considered. Still, this is an important study for those individuals with pituitary disease.

— Jerrold M. Stock, MD

ATA THYROID BROCHURE LINKS

Hypothyroidism: http://www.thyroid.org/what-is-hypothyroidism

Thyroid Hormone Treatment: http://www.thyroid.org/thyroid-hormone-treatment

Thyroid Function Tests: http://www.thyroid.org/blood-test-for-thyroid

ABBREVIATIONS & DEFINITIONS

Hypothyroidism: a condition where the thyroid gland is underactive and doesn't produce enough thyroid hormone. Treatment requires taking thyroid hormone pills.

Subclinical/mild hypothyroidism: a mild form of hypothyroidism where the only abnormal hormone level is an increased TSH. There is controversy as to whether this should be treated or not.

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HYPOTHYROIDISM, continued

Central hypothyroidism: a rare cause of hypothyroidism where the thyroid gland is normal and the problem is inadequate TSH secretion from the pituitary gland.

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.

Thyroid hormone therapy: patients with hypothyroidism are most often treated with Levothyroxine in order to return their thyroid hormone levels to normal. Replacement therapy means the goal is a TSH in the normal range and is the usual therapy. Suppressive therapy means that the goal is a TSH below the normal range and is used in thyroid cancer patients to prevent growth of any remaining cancer cells.

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 secreted by the thyroid gland. Thyroxine is broken down to produce Triiodothyronine which causes most of the effects of the thyroid hormones.

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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

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THYROID CANCER

Surgical treatment of RET mutation–positive medullary cancer can be based on measurement of calcitonin levels

BACKGROUND

Medullary thyroid cancer is a rare cancer which can occur as part of a genetic syndrome. Medullary cancer can be detected in family members by measuring calcitonin, which is a hormone produced by the cells in the thyroid gland that are abnormal in medullary cancer. Calcitonin identifies patients who already have developed cancers. A more sensitive test is a blood test looking for a mutation in the RET gene which can identify patients at risk before the cancers develop. Patients who have the RET gene mutation are called gene carriers. Early diagnosis can allow for treatment before medullary thyroid cancer becomes invasive or spreads to the lymph nodes, which increases the chance of death from the disease. It is recommended that gene carriers undergo early removal of their thyroid gland, even if there is no evidence of cancer being present. In this study the authors looked at delaying surgery in gene carriers based on calcitonin levels.

THE FULL ARTICLE TITLE

Elisei et al. The timing of total thyroidectomy in RET gene mutation carriers could be personalized and safely planned on the basis of serum calcitonin: 18 years experience at one single center. J Clin Endocrinol Metab 2012;97:426-35.

SUMMARY OF THE STUDY

This study examined 472 individuals from 103 families with medullary carcinoma. A total of 140 of these individuals had the RET gene mutation. A total of 89 individuals had already undergone thyroidectomy and 84 of these agreed to participate in the study. Calcitonin was measured before surgery before (baseline) and after stimulation with another hormone known as pentagastrin. The authors looked at three groups. In group 1, baseline calcitonin levels were elevated and the pentagastrin stimulation was positive. A total of 20 of 21 of these people had suspicious findings on neck ultrasound. In group 2, baseline calcitonin levels were normal, but the pentagastrin stimulation was positive. Group 3 had normal baseline and pentagrastrin stimulation tests.

The authors found that patients that had a calcitonin level of greater than 60 (Group 1) were typically found to spread of the cancer to the neck lymph node. When the calcitonin level was between 10 and 60 (Group 2), the cancer was usually confined to the thyroid and small and had not spread to the lymph nodes. The patients in group 3, showed no evidence of medullary thyroid cancer.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

This study suggests that patients with a calcitonin level of greater than 60 will have spread to the lymph nodes at the time of surgery. If calcitonin levels are less than 10, the cancer will typically be small at the time of surgery. According to these authors surgery may be delayed in patients with normal calcitonin and pentagastrin stimulated calcitonin levels. This may be particularly beneficial for young patients who may be at higher risk for complications at the time of surgery. This assumes that young patients will be carefully followed and aggressively treated if calcitonin levels increase.

— Ronald B. Kuppersmith, MD, FACS

ABBREVIATIONS & DEFINITIONS

Thyroidectomy: surgery to remove the entire thyroid gland. When the entire thyroid is removed it is termed a total thyroidectomy. When less is removed, such as in removal of a lobe, it is termed a partial thyroidectomy.

Medullary thyroid cancer: a relatively rare type of thyroid cancer that often runs in families. Medullary cancer arises from the C-cells in the thyroid.

Pentagastrin stimulation test: a sensitive test to stimulate calcitonin levels to diagnose latent medullary

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THYROID CANCER, continued

thyroid cancer. This test is currently unavailable in the United States.

Calcitonin: a hormone that is secreted by cells in the thyroid (C-cells) that has a minor effect on blood calcium levels. Calcitonin levels are increased in patients with medullary thyroid cancer.

RET gene: this is a gene that is normally expressed in cells. Thyroid cancer cells frequently have mutations in the RET gene. It is unclear whether mutations in this gene cause the cancer or are just associated with the cancer cells

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THYROID CANCER

Cancer staging for younger patients with extensive thyroid cancer needs to be re-evaluated

BACKGROUND

Thyroid cancer is uncommon in younger patients. However, younger patients often have more extensive disease as compared to adults and are more likely to present with spread of the cancer, both to the lymph nodes in the neck and outside of the neck. Despite this, most young patients have a good prognosis and usually have a long life expectancy that is minimally affected by the thyroid cancer. The American Joint Cancer Committee (AJCC) stages all types of cancer according to severity and risk of death from stages 1 – 4, with the risk of cancer recurrence and death highest in stage 4. However, according to the AJCC, spreading of thyroid cancer to other parts of the body is correlated with higher risk in older patients but not in patients younger than 45. Thus, extensive cancer that would be classified as stage 4 in an older patient would be no higher than stage 2 in a patient under 45. Although age is an important predictive factor for outcome of thyroid cancer, this way of classification may underestimate the risk of cancer in younger patients. This study analyzes the data from the Surveillance, Epidemiology and End Results (SEER) in order to determine the effectiveness of the AJCC staging system in predicting the risk of thyroid cancer for patients with thyroid cancer younger than 45.

THE FULL ARTICLE TITLE

Tran Cao HS et al. A critical analysis of the American Joint Committee on Cancer (AJCC) staging system for differentiated thyroid carcinoma in young patients on the basis of the Surveillance, Epidemiology, and End Results (SEER) registry. Surgery. April 11, 2012 [Epub ahead of print].

SUMMARY OF THE STUDY

The records of 49240 patients with thyroid cancer from the SEER database were reviewed as to the patient's age, initial presentation, treatment and follow up. Effect of age, cancer size, spread to lymph nodes and spread to other parts of the body were analyzed in order to determine the effect on risk of death because of thyroid cancer.

Increasing age correlated with increased risk for death because of cancer. Young patients with cancer spreading outside the thyroid and to other parts of the body had a higher risk of dying because of thyroid cancer as compared to those with cancer confined to thyroid gland.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

This study confirmed the major effect that age has on risk of cancer recurrence and death in patients with thyroid cancer. However, in contrast to the current AJCC staging system, this study showed that patients younger than 45 with extensive thyroid cancer are at higher risk of dying because of their cancer. Thus, the AJCC cancer staging system for patients with thyroid cancer younger than 45 years of age needs to be re-evaluated.

— Jamshid Farahati, MD

ATA THYROID BROCHURE LINKS

Cancer of the Thyroid: http://www.thyroid.org/cancer-of-the-thyroid-gland

ABBREVIATIONS & DEFINITIONS

Cancer metastasis: spread of the cancer from the initial organ where it developed to other organs, such as the lungs and bone.

SEER: Surveillance, Epidemiology and End Results program, a nation-wide anonymous cancer registry generated by the National Cancer Institute that contains information on 26% of the United States population. Website: http://seer.cancer.gov/

American Joint Cancer Committee (AJCC): the source for the generally accepted staging system that stages all types of cancer according to severity and risk of death from stage 1 – 4, with the risk of cancer recurrence and death highest in stage 4.

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ATA Alliance for Thyroid Patient Education

GOAL

The goal of our organizations is to provide accurate and reliable information for patients about the diagnosis, evaluation and treatment of thyroid diseases.

WHO WE ARE

AMERICAN THYROID ASSOCIATION

www.thyroid.org
ATA Patient Resources: http://www.thyroid.org/patients/
Find a Thyroid Specialist: www.thyroid.org
Phone (toll-free): 1-800-THYROID
e-mail: thyroid@thyroid.org

ATA Mission: The ATA leads in promoting thyroid health and understanding thyroid biology.
ATA Vision: The ATA is the leading organization focused on thyroid biology and the prevention and treatment of thyroid disorders through excellence and innovation in research, clinical care, education, and public health.
ATA Values: The ATA values scientific inquiry, clinical excellence, public service, education, collaboration, and collegiality.

To further our mission, vision and values the ATA sponsors "Friends of the ATA" online to advance the information provided to patients and the public such as this publication, *Clinical Thyroidology for Patients*. We welcome your support.

GRAVES' DISEASE AND THYROID FOUNDATION

www.gdatf.org
Phone (toll-free): 1-877-NGDF-123 or 643-3123
e-mail: Gravesdiseasefd@gmail.com

Founded in 1990, the Graves' Disease Foundation offers support and resources to Graves' disease patients, their families, and health care professionals. Their mission is to find the cause of and the cure for Graves' thyroid disease through research, to improve the quality of life for persons with Graves' disease and their caregivers and to educate persons with Graves' disease, their caregivers, healthcare professionals, and the general public about Graves' disease and its treatment. The web site features a monitored bulletin board.

LIGHT OF LIFE FOUNDATION

www.checkyourneck.com
email: info@checkyourneck.com

The Light of Life Foundation, founded in 1997, is a nonprofit organization that strives to improve the quality of life for thyroid cancer patients, educate the public and professionals about thyroid cancer, and promote research and development to improve thyroid cancer care.

THYCA: THYROID CANCER SURVIVORS' ASSOCIATION, INC.

www.thyca.org
Phone (toll-free): 877 588-7904
e-mail: thyca@thyca.org

ThyCa: Thyroid Cancer Survivors' Association, Inc., founded in 1995, is an international nonprofit organization, guided by a medical advisory council of renowned thyroid cancer specialists, offering support and information to thyroid cancer survivors, families, and health care professionals worldwide.

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GRAVES' DISEASE & THYROID FOUNDATION

Light of Life Foundation checkyourneck.com

ThyCa

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ATA Alliance for Thyroid Patient Education CALENDAR OF EVENTS

Educational forums, patient support groups and other patient-oriented meetings

ATA Conferences www.thyroid.org

September 22, 1–3 PM — Quebec City
Thyroid Patient Forum Contact the ATA for more information, 703-998-8890.

Graves' Disease Conferences www.gdatf.org

October 26- 28, 2012 - San Diego, CA
Patient & Family Conference at the beautiful Kona Kai Resort & Spa. Details at www.gdatf.org

Light of Life Foundation www.checkyourneck.com

Ongoing — www.checkyourneck.com
Thyroid Cancer Awareness campaign with Cindy Crawford and Brooke Shields

June 12, 2010 — a previous symposium available online at:
http://www.checkyourneck.com/About-Thyroid-Cancer/Thyroid-Cancer-Symposium-Presentations

Thyroid Cancer Symposium Presentations: What's New in Thyroid Cancer? A Day for Patients and Their Families

Please visit the Light of Life Foundation website to view the Patient Educational Symposium which took place in NYC in 2010. As part of the Patient Educational Program these online presentations provide valuable information in hopes that patients everywhere can gain further information and support about their disease.

November 17, 2012 — New York, NY
Annual Light of Life Foundation Patient Symposium. Details at www.checkyourneck.com

ThyCa Conferences www.thyca.org

Every Month
ThyCa Support Group Meetings around the United States and in Canada, Costa Rica, and Philippines. Complete list of groups, meetings, and contacts at www.thyca.org/sg/local

September 2012 — **Thyroid Cancer Awareness Month**
Worldwide observance sponsored by ThyCa: Thyroid Cancer Survivors' Association, Inc., with many partnering organizations. Details at www.thyca.org

October 19–21, 2012 — Chicago, Illinois. **The 15th International Thyroid Cancer Survivors' Conference** Sponsored by ThyCa: Thyroid Cancer Survivors' Association, Inc. Details at www.thyca.org

October 20, 2012 — Chicago, Illinois
The 10th Annual Dinner/Auction Fundraiser for Thyroid Cancer Research, in conjunction with the 15th International Thyroid Cancer Survivors' Conference
Sponsored by ThyCa: Thyroid Cancer Survivors' Association, Inc. Details at www.thyca.org