Clinical THYROIDOLOGY FOR PATIENTS

VOLUME 6 • ISSUE 9 • 2013

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CLINICAL THYROIDOLOGY **FOR PATIENTS**
A publication of the American Thyroid Association
VOLUME 6 • ISSUE 9 • 2013

EDITOR'S COMMENTS

Welcome to Clinical Thyroidology for Patients, bringing to you, the patient, 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.

We will be providing even faster updates of late-breaking thyroid news through Twitter at @thyroidfriends and on Facebook. Our goal is to provide you with the tools to be the most informed thyroid patient in the waiting room. Also check out our friends in the ATA 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*, *ThyCa: Thyroid Cancer Survivors Association*, *Thyroid Cancer Canada* and *Thyroid Federation International*.

In this issue, the studies ask the following questions:

- Does the treatment choice in hyperthyroid patients affect the risk of death?
- Can the diabetes drug metformin prevent goiters?
- What are the risk factors for developing eye disease after radioactive iodine treatment for Graves' disease?
- Can laser therapy be used to treat papillary thyroid cancer that has spread to lymph nodes?
- Does age or sex affect the relationship between FT_4 and TSH?

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.

— Alan P. Farwell, MD

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HYPERTHYROIDISM

Does the treatment choice between antithyroid drugs and radioactive iodine in hyperthyroid patients affect the risk of death?

BACKGROUND

The 2 most common causes of hyperthyroidism are Graves' Disease and toxic nodular goiter. Treatment options for hyperthyroidism include: radioactive iodine therapy, antithyroid drugs including methimazole or propylthiouracil and surgery. There has been controversy about a possible higher risk of death in the first year after radioactive iodine therapy for hyperthyroidism. One possible cause of this may be the development of an irregular heart rhythm known as atrial fibrillation. This study was done to compare the risk of death in patients treated with antithyroid drugs only to those treated with radioactive iodine. Some of those treated with radioactive iodine became hypothyroid and needed thyroid hormone treatment after therapy while some remained euthyroid without thyroid hormone. The effects of smoking, atrial fibrillation and having other medical illnesses and on the risk of death in these patients was also studied.

THE FULL ARTICLE TITLE

Boelaert K et al. Comparison of mortality in hyperthyroidism during periods of treatment with thionamides and after radioiodine. J Clin Endocrin Metab 2013; 98: 1869-1882.

SUMMARY OF THE STUDY

A total of 1036 patients older than 40 years with hyperthyroidism who were treated in a clinic in Birmingham, England were studied. They were compared to patients without hyperthyroidism. They were followed for more than 10 years and the death rates were determined. About half of the patients had Graves' disease and the others had a toxic nodular goiter. They were treated with either long-term antithyroid drugs or radioactive iodine. There were three groups studied. The first included patients treated with antithyroid drugs only, the second group was treated with radioactive iodine without need for thyroid hormone treatment and the third group was treated with radioactive iodine and became hypothyroid and needed thyroid hormone treatment. The group that got antithyroid drugs only had a 30% increase in death rate as compared to the non-hyperthyroid general population. The radioactive iodine therapy group which did not need thyroid hormone treatment had a 24% increase in the death rate. In these groups there was an excess of heart deaths. There was no increase in mortality during the first year of followup. The third group treated with radioactive iodine and later thyroid hormone treatment when they became hypothyroid did not have a higher risk of death. This apparent advantage of radioactive iodine therapy followed by hypothyroidism and thyroid hormone treatment was seen only in patients without other medical problems, atrial fibrillation or a smoking history.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

This study suggests that an increase in deaths in hyperthyroid patients is mainly due to heart causes and that is not observed in patients that become hypothyroid after radioactive iodine therapy. Therefore, the practice of treating patients using long-term antithyroid drugs therapy or RAI therapy with lower doses to avoid hypothyroidism may not be justified, as some patients in both groups may remain mildly hyperthyroid for extended periods of time. A final conclusion is that patients with hyperthyroidism should stop smoking, as smoking reduces the benefit of death risk reduction when hyperthyroidism is completely corrected by RAI therapy.

— Jerrold M. Stock, MD

ATA THYROID BROCHURE LINKS

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

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

Radioactive Iodine Therapy: http://www.thyroid.org/radioactive-iodine

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

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HYPERTHYROIDISM, continued

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.

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.

Toxic nodular goiter: characterized by one or more nodules or lumps in the thyroid that may gradually grow and increase their activity so that the total output of thyroid hormone in the blood is greater than normal.

Methimazole: an antithyroid medication that blocks the thyroid from making thyroid hormone. Methimazole is used to treat hyperthyroidism, especially when it is caused by Graves' disease.

Propylthiouracil (PTU): an antithyroid medication that blocks the thyroid from making thyroid hormone. Propylthiouracil is used to treat hyperthyroidism, especially in women during pregnancy.

Radioactive iodine (RAI): this plays a valuable role in diagnosing and treating thyroid problems since it is taken up only by the thyroid gland. I-131 is the destructive form used to destroy thyroid tissue in the treatment of thyroid cancer and with an overactive thyroid. I-123 is the non-destructive form that does not damage the thyroid and is used in scans to take pictures of the thyroid (Thyroid Scan) or to take pictures of the whole body to look for thyroid cancer (Whole Body Scan).

Euthyroid: a condition where the thyroid gland as working normally and producing normal levels of thyroid hormone.

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

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GOITER

Metformin prevents goiter in patients with type 2 diabetes

BACKGROUND

An enlarged thyroid gland is known as a goiter. There is an increased likelihood that patients with diabetes will develop thyroid disorders. This is higher in patients with type 1 diabetes, which is an autoimmune disorder like many thyroid disorders. Type 2 diabetes is more common and is not an autoimmune disorder. Studies have shown that patients with type 2 diabetes have larger thyroid glands than those without diabetes. Metformin is a drug that is frequently prescribed to control blood sugar in patients with type 2 diabetes. A prior study showed that metformin inhibits the growth of thyroid cells in the laboratory. This study examined the effects of metformin on thyroid size in type 2 diabetic patients versus those without diabetes.

THE FULL ARTICLE TITLE

Ittermann T et al. Metformin inhibits goitrogenous effects of type 2 diabetes. Eur J Endocrinol 2013;169:9-15.

SUMMARY OF THE STUDY

This study took place from 1997-2006 in West Pomerania, Germany. There are a lot of people in this region with a goiter and, because of this, there has been ongoing screening of the population for thyroid disorders with blood tests, thyroid ultrasound and thyroid measurements to see if they had a goiter. In this study, 2570 people were studied initially and 1088 of this group was followed over an average of 5 years. Records, physician assessments and self-reported diabetes medication use were used to determine if patients had type 2 diabetes.

Women with type 2 diabetes on medications other than metformin had a larger thyroid volume then women without diabetes and had a higher incidence of goiter. Women on metformin for type 2 diabetes had a similar thyroid volume nd similar incidence of goiter as women without diabetes. There was no such association in men. Interestingly, those patients that were on metformin and then switched to other diabetes medications also had a higher thyroid volume than patients without diabetes.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

This study suggests that metformin prevents growth of the thyroid gland. This is important to patients because this study shows that metformin gives type 2 diabetic patients an additional benefit. This study also suggests that metformin may play a future role in the treatment goiter

— Heather Hofflich, DO

ATA THYROID BROCHURE LINKS

Goiter: http://www.thyroid.org/what-is-a-goiter

ABBREVIATIONS & DEFINITIONS

Goiter: a thyroid gland that is enlarged for any reason is called a goiter. A goiter can be seen when the thyroid is overactive, underactive or functioning normally. If there are nodules in the goiter it is called a nodular goiter; if there is more than one nodule it is called a multinodular goiter.

Diabetes: a disorder caused by lack of insulin to control blood sugar levels. Type 1 diabetes is an autoimmune disorder where the insulin producing cells are destroyed. Type 2 diabetes is more common and is caused by the body being resistant to normal levels of insulin.

Thyroid Ultrasound: a common imaging test used to evaluate the structure of the thyroid gland. Ultrasound uses soundwaves to create a picture of the structure of the thyroid gland and accurately identify and characterize nodules within the thyroid. Ultrasound is also frequently used to guide the needle into a nodule during a thyroid nodule biopsy.

Metformin: a diabetes drug that controls blood sugar levels by decreasing insulin resistance.

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GRAVES' DISEASE

Early treatment of hypothyroidism after radioactive iodine therapy for Graves' disease prevents Graves' ophthalmopathy

BACKGROUND

Graves' disease is the most common cause of hyperthyroidism in the United States. It is caused by the body making an antibody that turns on the thyroid. Treatment options include antithyroid medications, radioactive iodine therapy and surgery. In the United States, radioactive iodine therapy is the most common treatment for Graves' disease. Occasionally Graves' disease can affect the eyes, which is known as Graves' ophthalmopathy. While most cases of ophthalmopathy are mild, in the most severe form it can threaten vision. One cause for concern is that radioactive iodine therapy has been associated with worsening Graves' ophthalmopathy. The present study evaluated the effects of radioactive iodine on the development of Graves' ophthalmopathy.

THE FULL ARTICLE TITLE

Stan MN et al, Cohort study on radioactive iodine-induced hypothyroidism: implications for Graves' ophthalmopathy and optimal timing for thyroid hormone assessment. Thyroid 2013;23;620-5 doi: 10.1089/thy.2012.0258.

SUMMARY OF THE STUDY

This study included 195 patients (80% women) treated for Graves' hyperthyroidism with radioactive iodine at a single institution. Patients were evaluated for the presence of Graves' ophthalmopathy before therapy and for the worsening or development of new Graves' ophthalmopathy following radioactive iodine therapy. The mean age was 50 years and the average duration of Graves' disease was 2 months. Prior to radioactive iodine therapy, 46 patients had evidence of Graves' ophthalmopathy - 38 mild and 8 moderate to severe. After 1 year of follow-up, 39 patients (20%) had Graves' ophthalmopathy including 15 new cases and 24 preexisting cases. In the 46 patients with Graves' ophthalmopathy at baseline, the Graves' ophthalmopathy did not progress in 9 and improved in 27. Altogether, after radioactive iodine therapy Graves' ophthalmopathy developed or worsened in 25 (12.8%) of the 195 treated patients. Hypothyroidism was present at the first followup visit in 102 patients (52.3%) and was strongly associated with the development or deterioration of Graves' ophthalmopathy. Although more smokers had new or worsening Graves' ophthalmopathy than nonsmokers (18% vs 12%), the difference was not significant.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

The presence of hypothyroidism after radioactive iodine therapy is a strong predictor for an adverse outcome of Graves' ophthalmopathy. This study suggests that patients that receive radioactive iodine therapy for treatment of their hyperthyroidism should be seen earlier than 6 weeks after their treatment and followed frequently. If hypothyroidism develops, it should be treated aggressively.

— Frank Crantz, MD

ATA THYROID BROCHURE LINKS

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

Radioactive iodine therapy: http://www.thyroid.org/radioactive-iodine

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

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GRAVES' DISEASE, continued

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.

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.

Graves' ophthalmopathy: also known as thyroid eye disease. Graves' ophthalmopathy is most often seen in patients with Graves' disease but also can be seen with Hashimoto's thyroiditis. Graves' ophthalmopathy includes inflammation of the eyes, eye muscles and the surrounding tissues. Symptoms include dry eyes, red eyes, bulging of the eyes and double vision.

Radioactive iodine (RAI): this plays a valuable role in diagnosing and treating thyroid problems since it is taken up only by the thyroid gland. I-131 is the destructive form used to destroy thyroid tissue in the treatment of thyroid cancer and with an overactive thyroid. I-123 is the non-destructive form that does not damage the thyroid and is used in scans to take pictures of the thyroid (Thyroid Scan) or to take pictures of the whole body to look for thyroid cancer (Whole Body Scan).

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THYROID CANCER

Percutaneous laser ablation is effective therapy for recurrence of papillary thyroid cancer in lymph nodes

BACKGROUND

Papillary thyroid cancer is the most common type of thyroid cancer. At the time of surgery, up to 30% of patients have spread of papillary cancer to the lymph nodes in the neck. Despite this, the prognosis of papillary cancer is very good. When papillary cancer recurs, it is usually in the lymph nodes in the neck. This cancer recurrence can be detected using ultrasound of the neck and a needle biopsy of suspicious lymph nodes. Standard treatment for the spread of papillary cancer to the lymph nodes is either surgical removal or radioactive iodine therapy. Percutaneous laser ablation has been used to destroy abnormal growths of tissue in skin and other areas. This study looks at percutaneous laser ablation as a new treatment of lymph nodes involved with papillary cancer.

THE FULL ARTICLE TITLE

Mauri G et al. Percutaneous laser ablation of metastatic lymph nodes in the neck from papillary thyroid carcinoma: preliminary results. J Clin Endocrinol Metab. May 10, 2013 [Epub ahead of print].

SUMMARY OF THE STUDY

The authors treated 15 patients with 24 new lymph nodes that were involved with papillary cancer. All patients previously had had a thyroidectomy and radioactive iodine treatment. The patients were followed for at least 6 months. Percutaneous laser ablation of lymph nodes containing cancer was performed under local anesthesia. In this technique, a needle is inserted into a lymph node under ultrasound guidance, an optic fiber is advanced to the needle tip and laser power is administered to cover several millimeters more than the volume of the lymph node. The technique was successfully performed in all patients. At six months, the lymph nodes containing cancer were treated successfully in 11 of 15 patients (20 of 24 lymph nodes). There were no complications.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

This is a small series of patients that shows that that percutaneous laser ablation can be safely performed and may be helpful in some cases. It is technically difficult to perform and not widely available. For now, surgery and radioactive iodine remain the standard treatments. As more data is collected, the role for this and other experimental techniques for treating spread to the lymph nodes will be better defined.

— Ronald B. Kuppersmith, MD, FACS

ATA THYROID BROCHURE LINKS

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

Radioactive Iodine Therapy: http://www.thyroid.org/radioactive-iodine

Thyroid Surgery: http://thyroid.org/patients/patient_brochures/surgery.html

ABBREVIATIONS & DEFINITIONS

Papillary thyroid cancer: the most common type of thyroid cancer.

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

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.

Radioactive iodine (RAI): this plays a valuable role in diagnosing and treating thyroid problems since it is taken up only by the thyroid gland. I-131 is the destructive form used to destroy thyroid tissue in the treatment of thyroid cancer and with an overactive thyroid. I-123 is the non-destructive form that does not damage the thyroid and is used in scans to take pictures of the thyroid (Thyroid Scan) or to take pictures of the whole body to look for thyroid cancer (Whole Body Scan).

Percutaneous laser ablation: this is a new technique using laser power to destroy abnormal growths of tissues, including cancer. In this technique, a needle is inserted into a lymph node under ultrasound guidance, an optic fiber is advanced to the needle tip and laser power is administered.

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THYROID HORMONES

Both age and sex affects the relationship between blood levels of T_4 and TSH

BACKGROUND

The main thyroid hormone that is produced by the thyroid gland is thyroxine (T_4). The production of T_4 is regulated by thyroid stimulating hormone (TSH) which is secreted by the pituitary gland. T_4 is measured in the blood as free T_4 (FT_4). In general, there is a direct relationship between blood levels of FT_4 and TSH. However, there is little information as to whether age or sex has any influence on this FT_4:TSH relationship. This is important, since management of the treatment of hypothyroidism or hyperthyroidism relies on getting both FT_4 and TSH in the normal range. The aim of this study was to examine the effect of age and sex on the relationship between blood measurements of FT_4 and TSH.

THE FULL ARTICLE TITLE

Hadlow NC et al. The relationship between TSH and free T_4 in a large population is complex, non-linear and differs by age and gender. J Clin Endocrinol Metab. May 13, 2013 [Epub ahead of print].

SUMMARY OF THE STUDY

The authors of this study examined the general relationship between TSH and FT_4, as well as differences according to age and sex, using blood samples from 152,261 individuals that had been collected in a single laboratory in Australia over 12 years. The study excluded blood specimens from individuals who were in hospital, pregnant, younger than 1 year of age, since these factors can alter both FT_4 and TSH levels. Approximately 21% of the blood specimens in the study were from individuals who were taking thyroid hormone. The authors performed complex statistical analyses and graphed the results, determining that the relationship between TSH and FT_4 levels was complex. For FT_4 measurements that were within the normal range, men tended to have slightly higher TSH values than women and TSH values tended to be higher with older age. However, in hypothyroid patients with low FT_4 levels below normal range, TSH values tended not to be as high in older individuals as compared to younger individuals. In general, when FT_4 levels were normal, the relationship between TSH measurements and FT_4 was not significantly different between individuals treated with thyroid hormone, as compared to those not treated with thyroid hormone.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

This study shows that the relationship between TSH and FT_4 blood measurements is more complex than originally thought. In patients with normal thyroid function, men appear to have higher TSH levels than women. The degree of TSH elevation in hypothyroidism is less in the older patient than in the younger one. Thus, this study suggests that both age and sex need to be taken in consideration when interpreting blood levels of FT_4 and TSH.

— Anna Sawka, MD

ATA THYROID BROCHURE LINKS

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

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

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

ABBREVIATIONS & DEFINITIONS

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

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.

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THYROID HORMONES, continued

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.

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.

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.

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ATA Alliance for Thyroid Patient Education

WELCOME

The American Thyroid Association is pleased to welcome our two newest members, **Thyroid Federation International** and **Thyroid Cancer Canada**, to the 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.

We look forward to future collaborations and continuing to work together towards the improvement of thyroid education and resources for patients.

WHO WE ARE (in alphabetical order)

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.

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ThyCa: Thyroid Cancer Survivors' Association, Inc.
www.thyca.org

GRAVES' DISEASE & THYROID FOUNDATION

Thyroid Cancer Canada
Cancer de la thyroïde Canada

Light of Life Foundation
checkyourneck.com

Thyroid Federation International

ATA Alliance for Thyroid Patient Education

Continued...

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.

THYROID CANCER CANADA

WWW.THYROIDCANCERCANADA.ORG

Phone: 416-487-8267
Fax: 416-487-0601
e-mail: info@thyroidcancercanada.org

Thyroid Cancer Canada is a non-profit organization founded in 2000. The organization works towards creating an environment in which people who are dealing with thyroid cancer, especially the newly diagnosed, are met with support and information. Their goals & objectives include facilitating communication among thyroid cancer patients, providing credible information about the disease, providing emotional support, and assisting thyroid cancer patients with voicing their needs to health care professionals and those who are responsible for health care policy.

THYROID FEDERATION INTERNATIONAL

HTTP://WWW.THYROID-FED.ORG/

e-mail: tfi@thyroid-fed.org

Thyroid Federation International (TFI) was established in Toronto in 1995. Thyroid Federation International aims to work for the benefit of those affected by thyroid disorders throughout the world by providing a network of patient support organizations.

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ThyCa: Thyroid Cancer Survivors' Association, Inc. www.thyca.org

GRAVES' DISEASE & THYROID FOUNDATION

Thyroid Cancer Canada
Cancer de la thyroïde Canada

Light of Life Foundation checkyourneck.com

Thyroid Federation International

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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

October 16–20, 2013 — San Juan, Puerto Rico
83rd Annual Meeting of the American Thyroid Association (ATA)
www.thyroid.org

ThyCa Conferences www.thyca.org

September 27–29, 2013 — Philadelphia, Pennsylvania
16th International Thyroid Cancer Survivors' Conference -
See more at: http://www.thyca.org/support/conferences/

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