Clinical THYROIDOLOGY FOR THE PUBLIC

AMERICAN THYROID ASSOCIATION
FOUNDED 1923

VOLUME 8 • ISSUE 4 • 2015

www.thyroid.org

A publication of the American Thyroid Association

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EDITOR'S COMMENTS

Welcome to another issue of *Clinical Thyroidology for the Public*. In this journal, we will bring to you the most up-to-date, cutting edge thyroid research. We will be providing summaries of research studies that were discussed in a recent issue of *Clinical Thyroidology*, a publication of the American Thyroid Association for physicians. These summaries are present in lay language to allow the rapid dissemination of thyroid research to the widest possible audience. This means that you are getting the latest information on thyroid research and treatment almost as soon as your physicians. As always, we are happy to entertain any suggestions to improve *Clinical Thyroidology for the Public* so let us know what you want to see.

We also provide even faster updates of late-breaking thyroid news through Twitter at @thyroidfriends and on Facebook. Our goal is to provide patients with the tools to be the most informed thyroid patient in the waiting room.

Also check out our friends in the Alliance for Thyroid Patient Education. The Alliance member groups consist of: the *American Thyroid Association*, *Bite Me Cancer*, the *Graves' Disease and Thyroid Foundation*, the *Light of Life Foundation*, *ThyCa: Thyroid Cancer Survivors Association*, *Thyroid Cancer Canada and Thyroid Federation International*.

April is Medullary Thyroid Cancer Awareness Month.

In this issue, the studies ask the following questions:

1. Do patients with type 1 diabetes have an increased risk of thyroid disease?
2. What are the risk factors for developing eye disease in patients with Graves' disease?
3. Do BRAF mutations predict survival in patients with thyroid cancer?
4. Are high doses of radioactive iodine better than lower doses in older patients?
5. How does spread of cancer outside of the neck alter prognosis in patients with thyroid cancer?

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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AUTOIMMUNE THYROID DISEASE

Thyroid antibodies are frequently detected in patients with type 1 diabetes mellitus

BACKGROUND

Autoimmune disease occurs when the body attaches tissues with antibodies that usually attack infections. Individuals with type 1 diabetes mellitus (T1DM) have antibodies which attack the cells responsible for insulin production, thus resulting in the high blood sugars seen in this form of diabetes. T1DM is the less common form of diabetes. Having T1DM increases the risk of having antibodies which attack other tissues in the body, including the thyroid gland. Thyroid antibodies can either turn on the thyroid to cause hyperthyroidism, or turn off the thyroid to cause hypothyroidism. Autoimmune thyroid disease is the most common cause of hyperthyroidism and hypothyroidism in the United States. Thyroid antibodies that can be measured in the blood include antibodies to thyroglobulin (Tg) and thyroid peroxidase (TPO) as well as antibodies to the thyroid hormones T_4 and T_3. This study was done to measure levels of thyroid antibodies in patients with T1DM. In addition, the researchers studied whether having thyroid antibodies increased the chance of developing complications of diabetes, including vascular problems related to diabetic eye, nerve, or kidney diseases.

THE FULL ARTICLE TITLE

Benvenga S et al. Serum thyroid hormone autoantibodies in type 1 diabetes mellitus. J Clin Endocrinol Metab [Epub ahead of print].

SUMMARY OF THE STUDY

This was a study of 52 adult patients with T1DM in Italy followed for six years. The patients had two sets of measurements performed, at the beginning of the study and six years later, of antibodies in the blood to Tg, TPO and the thyroid hormones. They also had thyroid ultrasounds to assess for inflammation in the thyroid gland by imaging. Finally, patients were surveyed to see if any diabetes-related complications were present at the two timepoints.

The researchers found a mild increase in the frequency of Tg or TPO antibodies, or thyroid inflammation by imaging, at the end of the 6 year study. These antibodies and/or inflammation of the thyroid were generally not associated with any diabetes complications. Most of these T1DM patients had at least one positive type of thyroid antibody, compared to the usual frequency of only about 1% in a healthy population without T1DM. However, similar to the findings regarding Tg or TPO antibodies or thyroid inflammation by imaging, antibodies to the thyroid hormones were also generally not associated with any diabetes complications. In some patients, the type of thyroid hormone antibody attacking the thyroid hormone called T_3 was associated with a very slightly increased frequency of some diabetic vascular complications.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

This study reports that individuals with T1DM have an increased frequency of antibodies attacking the thyroid. This has never been studied and represents a novel finding in patients with autoimmune thyroid disease and T1DM. The observation that antibodies attacking the thyroid hormone called T_3 may be linked to worsening diabetes complications needs to be further analyzed in future research studies. If the findings are confirmed, the T_3 antibody measurement may represent a potentially useful test to monitor for the development of vascular complications in patients with T1DM. In addition, patients with T1DM need to be monitored for the development of thyroid disease, as is noted in several national guidelines.

— Angela M. Leung, MD, MSc

ATA THYROID BROCHURE LINKS

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

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

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

AUTOIMMUNE THYROID DISEASE, continued

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.

Autoimmune thyroid disease: a group of disorders that are caused by antibodies that get confused and attack the thyroid. These antibodies can either turn on the thyroid (Graves' disease, hyperthyroidism) or turn it off (Hashimoto's thyroiditis, hypothyroidism).

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.

TPO antibodies: these are antibodies that attack the thyroid instead of bacteria and viruses, they are a marker for autoimmune thyroid disease, which is the main underlying cause for hypothyroidism and hyperthyroidism in the United States.

Thyroglobulin antibodies: these are antibodies that attack the thyroid instead of bacteria and viruses, they are a marker for autoimmune thyroid disease, which is the main underlying cause for hypothyroidism and hyperthyroidism in the United States.

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THYROID EYE DISEASE

Cholesterol lowering medications and thyroidectomy may reduce the risk of thyroid eye disease

BACKGROUND

Graves disease is an autoimmune disease cause by antinodies that attack and turn on the thyroid, leading to hyperthyroidism. Some patients with Graves' disease can develop eye problems, known as thyroid eye disease. Thyroid eye disease can range from mild to severe and can be very hard to treat. This study was done to try to figure out which patients may be more likely to develop thyroid eye disease. A large database of patients was used to identify patients with a new diagnosis of Graves' disease and/or thyroid eye disease and then information was collected about their treatment. Patients with Graves' disease can be treated with medications, radioactive iodine ablation or thyroidectomy. Medication data was also collected to analyze whether patients taking anti-inflammatory medications or a family of drugs used to treat high cholesterol, called statins, could affect the risk of getting thyroid eye disease.

THE FULL ARTICLE TITLE

Stein JD et al. Risk factors for developing thyroid-associated ophthalmopathy among individuals with Graves disease. JAMA Ophthalmol. December 11, 2014 [epub].

SUMMARY OF THE STUDY

The Clinformatics database (Optum) was used to get information on patients with newly diagnosed Graves' disease and thyroid eye disease. Of the 8404 patients identified with Graves disease, 740 (8.8%) developed thyroid eye disease. Those who developed thyroid eye disease were younger with an average age of less than 45 years old. They found that of the patients who had a thyroidectomy as the only treatment or in addition to radioactive iodine ablation, the risk for developing thyroid eye disease was decreased by 74% compared by those patients who were treated with radioactive iodine therapy only. In addition, patients with TSH level >7mU/L had an increased risk for thyroid eye disease than those with TSH level <7 mU/L. Lastly, they found that patients taking statins had lower risk for developing thyroid eye disease `than those who did not take statins. There was no effect of other cholesterol lowering medications or of any anti-inflammatory medication.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

This is an interesting study suggesting that thyroidectomy and statin use may decrease the risk of developing thyroid eye disease in patients with Graves' disease. Patients should be aware of these findings and discuss the treatment options for Graves' with their physician. At this point, there is not enough information to recommend stating therapy in patients with thyroid eye disease.

—Wendy Sacks, MD

ATA THYROID BROCHURE LINKS

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

ABBREVIATIONS & DEFINITIONS

Autoimmune thyroid disease: a group of disorders that are caused by antibodies that get confused and attack the thyroid. These antibodies can either turn on the thyroid (Graves' disease, hyperthyroidism) or turn it off (Hashimoto's thyroiditis, hypothyroidism).

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.

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

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THYROID EYE DISEASE, continued

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.

Statins: a family of cholesterol lowering medications. Statins are the most common therapy for high cholesterol medications.

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THYROID CANCER

BRAF V600 mutations are common but may not predict survival in thyroid cancer

BACKGROUND

Papillary thyroid cancer is the most common type of thyroid cancer. Mutations in certain cancer-associated genes are frequently found in thyroid cancer. In particular, BRAF V600E mutations are found in up to 80% of cases of papillary thyroid cancer. Several studies have examined the association between the presence of BRAF V600E mutations and the aggressiveness of papillary thyroid cancer with mixed results. This study aimed to determine the relationship between the BRAF V600E mutation status and clinical outcome of papillary thyroid cancer, including overall and disease-specific survival.

THE FULL ARTICLE TITLE

Niederer-Wüst S et al. Impact of clinical risk scores and BRAF V600E mutation status on outcome in papillary thyroid cancer. Surgery 2015;157:119-25.

SUMMARY OF THE STUDY

A total of 147 patients with papillary thyroid cancer >1 cm in size treated between 1990 and 2011 at the Kantonsspital St. Gallen in Switzerland were included in the study. The average observation time was 6.5 years. All patients were treated with a total thyroidectomy, 99% were treated with radioactive iodine therapy and 81% underwent central neck dissection to remove lymph nodes at the time of initial surgery. Upon review of the charts, patients were staged using 3 different staging systems. Overall survival, disease-specific survival and recurrence-free survival were determined. A total of 116 of 147 cancer specimens were examined for BRAF mutations. The relationship between BRAF status and clinical outcome was determined for those 116 patients.

BRAF V600E mutations were identified in 65% of the specimens. Recurrent cancer was found in 8% of the patients. A total of 2.5% of the patients died of papillary thyroid cancer. Overall patients did very well. The 5- and 10-year rate of overall survival was 92% and 87%, disease-specific survival was 98% and 96% and recurrence-free survival was 96% and 94%. There was no correlation between the BRAF V600E mutation status and change in overall survival.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

The majority of patients with papillary thyroid cancer have an excellent prognosis, with a high overall and disease-free survival. This study showed that BRAF mutation status was not prognostic of poor survival and did not correlate with any of the commonly used risk stratification scores for thyroid cancer. However controversy still exists and more studies are needed to determine whether BRAF mutation status can be used for papillary thyroid cancer risk assessment.

— Maria Papaleontiou, MD

ATA THYROID BROCHURE LINKS

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

DEFINITIONS AND ABBREVIATIONS

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

Genes: a molecular unit of heredity of a living organism. Living beings depend on genes, as they code for all proteins and RNA chains that have functions in a cell. Genes hold the information to build and maintain an organism's cells and pass genetic traits to offspring.

Cancer-associated genes: these are genes that are normally expressed in cells. Cancer cells frequently have mutations in these genes. It is unclear whether mutations in these genes cause the cancer or are just associated with the cancer cells. The cancer-associated genes important in thyroid cancer are BRAF, RET/PTC and RAS.

Mutation: A permanent change in one of the genes.

BRAF gene: this is gene that codes for a protein that is

THYROID CANCER, continued

involved in a signaling pathway and is important for cell growth. Mutations in the BRAF gene in adults appear to cause cancer.

Total thyroidectomy: surgery to remove the entire thyroid gland.

Thyroid Remnant Ablation: destruction of the small amount of thyroid tissue that remains after surgery (thyroidectomy) with the use of radioactive iodine.

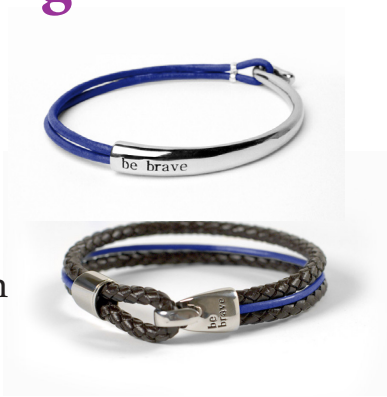
Radioactive iodine therapy: Radioactive iodine is used to destroy thyroid tissue in the treatment of thyroid cancer.

Central neck dissection: Careful removal of all lymphoid tissue in the central compartment of the neck, even if no obvious cancer is apparent in these lymph nodes.

Cancer recurrence: this occurs when the cancer comes back after an initial treatment that was successful in destroying all detectable cancer at some point.

Thyroid Awareness Monthly Campaigns

The ATA will be highlighting a distinct thyroid disorder each month and a portion of the sales for Bravelets™ will be donated to the ATA. The month of March is **Medullary Thyroid Cancer Awareness Month** and a bracelet is available through the ATA Marketplace to support thyroid cancer awareness and education related to thyroid disease.



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THYROID CANCER

Higher initial doses of radioactive iodine therapy for thyroid cancer may decrease recurrence and improve long-term survival in older patients

BACKGROUND

The treatment of thyroid cancer usually involves surgery (total thyroidectomy) and often includes radioactive iodine therapy. Radioactive iodine has been shown to improve survival and decrease recurrence rates with aggressive thyroid cancer, but not in small, low risk thyroid cancer. This is especially true in young patients with small papillary thyroid cancers. As such, low risk patients with thyroid cancer are often not treated with radioactive iodine therapy and, when they are treated, lower doses of radioactive iodine are often used. Studies of these patients over many years are lacking, as this is a relatively recent topic of study. Because of this, there is some concern we are underestimating the potential impact of this lower dose treatment on cancer recurrence. This study was done to compare different initial doses of radioactive iodine therapy on rates of complete remission, recurrence, and thyroid cancer deaths, as well as impact on life expectancy.

THE FULL ARTICLE TITLE

Verburg FA et al. Long-term survival in differentiated thyroid cancer is worse after low activity initial post-surgical ^{131}I therapy in both high- and low-risk patients. J Clin Endocrinol Metab 2014;99:4487-96.

SUMMARY OF THE STUDY

A review of records was performed in a University Hospital setting in Germany. This included 1298 patients with papillary or follicular thyroid cancer treated with total thyroidectomy and at least one radioactive iodine treatment between January 1980 and June 2008. Radioactive iodine treatment doses changed over time, ranging from 27-95 mCi, based upon the physician preference at the time. Prior to treatment, radioactive iodine imaging and ultrasound was performed. Further surgery was done prior to radioactive iodine therapy if findings on imaging suggested that was necessary.

Using this strict definition of complete remission, patients required more numerous treatments with radioactive iodine if they received low initial radioactive iodine doses. Death from thyroid cancer was low in older patients with low risk cancer. However, if the patients were followed longer, it was noted that the patients in the lower radioactive iodine dose group had a higher death rate at 10-15 years than in the middle and high dose groups. In high risk patients without spread of the cancer outside of the neck, recurrence rates were higher in the low radioactive iodine dose group. Life expectancy was not changed in any of the three groups in younger patients but was decreased in both the low dose and high dose groups of older patients.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

A lower dose of radioactive iodine in older patients (in both low and high risk cancers) was associated with higher death rates from thyroid cancer. Patients over the age of 45 may require higher initial doses (>54 mCi) of radioactive iodine to have lower recurrence rates and improved survival. This study suggests that older patients with thyroid cancer may need for higher doses of radioactive iodine therapy.

— Julie E. Hallanger Johnson, MD

ATA THYROID BROCHURE LINKS

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

ABBREVIATIONS & DEFINITIONS

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, continued

mCi: millicurie, the units used for I-131.

Cancer recurrence: this occurs when the cancer comes back after an initial treatment that was successful in destroying all detectable cancer at some point.

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THYROID CANCER

Survival prognosis in metastatic thyroid cancer

BACKGROUND

Most patients with thyroid cancer have the cancer contained in the thyroid at the time of diagnosis. About 30% will have metastatic cancer, with most having spread of the cancer to the lymph nodes in the neck and only 1-4% having spread of the cancer outside of the neck to other organs such as the lungs and bone. Most patients with thyroid cancer have an excellent prognosis, even if there is spread outside of the neck at the time of diagnosis. However, death, while rare, occurs mainly in patients that have spread of the cancer outside of the neck to other organs. This study examined patients with metastatic cancer outside of the neck to determine the factors that predict prognosis.

THE FULL ARTICLE TITLE

Wang LY et al. Multi-organ distant metastases confer worse disease-specific survival in differentiated thyroid cancer. Thyroid. September 24, 2014 [Epub ahead of print].

SUMMARY OF THE STUDY

The Memorial Sloan-Kettering institutional database was searched for patients with thyroid cancer with distant metastases found either at diagnosis or during follow-up. Spread of the cancer to single organs developed in 93 patients and multi-organ spread was seen in 32 patients. The average follow-up was 77 months. Overall survival and recurrence-free survival were calculated at 5 years. In this group, 70% of patients had spread of the cancer to the lymph nodes in the neck and 57% had spread of the cancer outside of the neck. The lung was the most common site of distant metastasis (84%). The 5-year survival was 77.6% in patients with single-organ metastasis and 15.3 % in patients with multi-organ metastases. The average interval between the first and second metastases was 14.7 months. Progression from single- to multi-organ metastases occurred in 76% of patients at 5 years. An age >45 years and an unstimulated thyroglobulin level of >30 ng/ml when distant metastasis was discovered were predictive of the development of multi-organ metastases.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

Multi-organ distant metastases are predictive of poor overall survival as these patients had a three-fold higher risk of death than patients with single-organ metastases. This study suggests that patients that have spread of the cancer outside of the neck when initially diagnosed should be treated aggressively, as this is the population that is most likely to die of thyroid cancer.

— Alan P. Farwell, MD

ATA THYROID BROCHURE LINKS

Thyroid cancer: 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.

Lymph node: bean-shaped organ that plays a role in removing what the body considers harmful, such as infections and cancer cells.

Cancer recurrence: this occurs when the cancer comes back after an initial treatment that was successful in destroying all detectable cancer at some point.

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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.

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**
- **Bite Me Cancer**
- **Graves' Disease and Thyroid Foundation**
- **Light of Life Foundation**
- **ThyCa: Thyroid Cancer Survivors' Association, Inc.**
- **Thyroid Cancer Canada**
- **Thyroid Federation International**

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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 the Public*. We welcome your support.

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ATA Alliance for Thyroid Patient Education

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BITE ME CANCER

http://www.bitemecancer.org

Bite Me Cancer was formed as a nonprofit foundation in September, 2010, by Nikki Ferraro, who was 17-years old at the time. Nikki was diagnosed with a rare form of thyroid cancer in April 2010 when she was a junior at Chantilly HS in Virginia. Nikki was determined to lead a Relay for Life team just two weeks after her diagnosis. She named the team Bite Me Cancer and experienced immediate success. When Nikki decided to create a foundation a few months later, she wanted to continue the legacy of her team name and thus her foundation became the Bite Me Cancer Foundation.

e-mail: info@bitemecancer.org

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.

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Light of Life Foundation
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ATA Alliance for Thyroid Patient Education

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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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Light of Life Foundation checkyourneck.com

GRAVES' DISEASE & THYROID FOUNDATION

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

Thyroid Federation International

Thyroid Cancer Canada
Cancer de la thyroïde Canada

BITE ME cancer® attitude is everything.

Postpartum Thyroiditis

WHAT IS THE THYROID GLAND?

The thyroid gland is a butterfly-shaped endocrine gland that is normally located in the lower front of the neck. The thyroid's job is to make thyroid hormones, which are secreted into the blood and then carried to every tissue in the body. Thyroid hormone helps the body use energy, stay warm and keep the brain, heart, muscles, and other organs working as they should.

WHAT ARE THE SYMPTOMS OF POSTPARTUM THYROIDITIS?

Thyroiditis is a general term that refers to "inflammation of the thyroid gland" (see *Thyroiditis Brochure*); thus, postpartum thyroiditis is thyroiditis that occurs in women after the delivery of a baby. Thyroiditis can cause both thyrotoxicosis (high thyroid hormone levels in the blood) and hypothyroidism (low thyroid hormone levels in the blood). In postpartum thyroiditis, thyrotoxicosis occurs first followed by hypothyroidism.

WHAT CAUSES POSTPARTUM THYROIDITIS?

The exact cause is not known but it is believed to be an autoimmune disease very similar to Hashimoto's thyroiditis. In fact, these two disorders cannot be distinguished from one another on pathology specimens. As in Hashimoto's thyroiditis, postpartum thyroiditis is associated with the development of anti-thyroid (anti-thyroid peroxidase, anti-thyroglobulin) antibodies. Women with positive antithyroid antibodies are at a much higher risk of developing postpartum thyroiditis than women who do not have have positive antibodies. It is believed that women who develop postpartum thyroiditis have an underlying asymptomatic autoimmune thyroiditis that flares in the postpartum period when there are fluctuations in immune function.

HOW COMMON IS POSTPARTUM THYROIDITIS?

In the United Status, postpartum thyroiditis occurs in approximately 5-10% of women. The incidence can be greater in certain high-risk populations (see below).

Who is at risk for developing postpartum thyroiditis?

Any woman with:

- Autoimmune disorders (such as Type 1, or juvenile onset, Diabetes Mellitus)
- Positive anti-thyroid antibodies (risk correlates with antibody levels, the higher the antibody the higher the risk)
- History of previous thyroid dysfunction
- History of previous postpartum thyroiditis (20% of women will have recurrence of thyroiditis with subsequent pregnancies)
- Family history of thyroid dysfunction

WHAT IS THE DIAGNOSIS AND CLINICAL COURSE OF POSTPARTUM THYROIDITIS?

The classic description of postpartum thyroiditis includes thyrotoxicosis followed by hypothyroidism. Not all women demonstrate evidence of going through both phases; approximately 1/3 of patients will manifest both phases, while 1/3 of patients will have only a thyrotoxic or hypothyroid phase. The thyrotoxic phase occurs 1-4 months after delivery of a child, lasts for 1-3 months and is associated with symptoms including anxiety, insomnia, palpitations (fast heart rate), fatigue, weight loss, and irritability. Since these symptoms are often attributed to being postpartum and the stress of having a new baby, the thyrotoxic phase of post-partum thyroiditis is often missed. It is much more common for women to present in the hypothyroid phase, which typically occurs 4-8 months after delivery and may last up to 9 –12 months. Typical symptoms include fatigue, weight gain, constipation, dry skin, depression and poor exercise tolerance. Most women will have return of their thyroid function to normal within 12-18 months of the onset of symptoms. However, approximately 20% of those that go into a hypothyroid phase will remain hypothyroid.

Postpartum Thyroiditis

HOW IS POSTPARTUM THYROIDITIS TREATED?

Treatment depends on the phase of thyroiditis and degree of symptoms that patients exhibit. Women presenting with thyrotoxicosis may be treated with beta blockers to decrease palpitations and reduce shakes and tremors. As symptoms improve, the medication is tapered off since the thyrotoxic phase is transient. Antithyroid medications (see *Hyperthyroid brochure*) are not used for the thyrotoxic phase since the thyroid is not overactive.

The hypothyroid phase is often treated with thyroid hormone replacement (see *Thyroid Hormone Therapy brochure*). If the hypothyroidism is mild, and the patient has few, if any, symptoms, no therapy may be necessary. If thyroid hormone therapy is begun, treatment should be continued for approximately 6-12 months and then tapered to see if thyroid hormone is required permanently. It is always important to try to discontinue thyroid hormone after postpartum thyroiditis, since 80% of patients will regain normal thyroid function and not require chronic therapy.

FURTHER INFORMATION

Further details on this and other thyroid-related topics are available in the patient information section on the American Thyroid Association® website at ***www.thyroid.org***.